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#### EDUCATION

##### University

University at Buffalo, State University of New York, Ph.D., Elementary Education, 1983.

Dissertation: A comparison: The effects of a logical foundations vs. a number skills curriculum on young children's learning of number and logic

M.Ed., Elementary and Remedial Education, 1977

B.A., Sociology, 1972

Rensselaer Polytechnic Institute; major, science; 1968-1970

##### Certification

Permanent certification, New York State: Nursery, Kindergarten, and Grades 1-6

#### EXPERIENCE

##### University

Kennedy Endowed Chair in Early Childhood Learning; Executive Director, Marsico Institute for Early Learning; and Distinguished University Professor, University of Denver, 2018-present

Kennedy Endowed Chair in Early Childhood Learning; Executive Director, Marsico Institute for Early Learning; and Professor, University of Denver, 2012-2018

SUNY Distinguished Professor, University at Buffalo, SUNY, 2008-2012  
Professor, University at Buffalo, State University of New York, 1993-2008

Associate Professor, University at Buffalo, SUNY, 1988-1993

Associate Professor, Kent State University, 1987-1988

Assistant Professor, Kent State University, 1982-1987

##### Elementary and Early Childhood

Preschool teacher/coordinator, Early Childhood Research Center, University at Buffalo, State University of New York, 1981-1982.  
(Graduate assistantship)

Kindergarten teacher, Stevenson Elementary, Wilson Central Schools, 1976-1981

## PROFESSIONAL CONTRIBUTIONS

### Publications: Articles in Refereed Journals

1. Wan, S., Bond, T. N., Lang, K., Clements, D. H., Sarama, J., & Bailey, D. H. (2021). Is intervention fadeout a scaling artefact? *Economics of Education Review*, 82. <https://doi.org/10.1016/j.econedurev.2021.102090>
2. Clements, D. H., Dumas, D., Dong, Y., Banse, H. W., Sarama, J., & Day-Hess, C. A. (2020). Strategy diversity in early mathematics classrooms. *Contemporary Educational Psychology*, 60. doi: 10.1016/j.cedpsych.2019.101834
3. Clements, D. H., Sarama, J., Baroody, A. J., & Joswick, C. (2020). Efficacy of a learning trajectory approach compared to a teach-to-target approach for addition and subtraction. *ZDM Mathematics Education*, 52, 637–648. doi: 10.1007/s11858-019-01122-z
4. Clements, D. H., Sarama, J., Brenneman, K., Duke, N. K., & Hemmeter, M. L. (2020). STREAM education at work—No, at play! A toy-making unit. *YC Young Children*, 75(2), 36-43.
5. Clements, D. H., Sarama, J., Layzer, C., Unlu, F., & Fesler, L. (2020). Effects on mathematics and executive function of a mathematics and play intervention versus mathematics alone. *Journal for Research in Mathematics Education*, 51(3), 301-333. doi: 10.5951/jresmetheduc-2019-0069
6. Clements, D. H., Vinh, M., Lim, C.-I., & Sarama, J. (2020). STEM for inclusive excellence and equity. *Early Education and Development*. doi: 10.1080/10409289.2020.1755776
7. Eames, C. L., Barrett, J. E., Cullen, C. J., Rutherford, G., Klanderma, D., Clements, D. H., Sarama, Julie, and Van Dine, D. W. (2020). Examining and developing fourth grade children’s area estimation performance. *School Science and Mathematics*, 120(2), 67-78. doi: 10.1111/ssm.12386
8. Clements, D. H. (2019). Size sequencing: Increasingly important for theory, research, and practice. [Peer commentary on the article “The Development of Size Sequencing Skills: An Empirical and Computational Analysis” by M. McGonigle-Chalmers and I. Kusel]. *Monograph Matters*. *Monographs of the Society for Research in Child Development*, 84(4), 1-5. doi: <https://doi.org/10.1111/mono.12411>
9. Clements, D. H., Sarama, J., Baroody, A. J., Joswick, C., & Wolfe, C. B. (2019). Evaluating the efficacy of a learning trajectory for early shape composition. *American Educational Research Journal*, 56(6), 2509-2530. doi: 10.3102/0002831219842788
10. Dumas, D., McNeish, D., Sarama, J., & Clements, D. (2019). Preschool mathematics intervention can significantly improve student learning trajectories through elementary school. *AERA Open*, 5(4), 1-5. doi:10.1177/2332858419879446
11. Clements, D. H., Fuson, K. C., & Sarama, J. (2019). Critiques of the common core in early math: A research-based response. *Journal for*

Research in Mathematics Education, 50(1), 11–22.

doi:10.5951/jresematheduc.50.1.0011

12. Joswick, C., Clements, D. H., Sarama, J., Banse, H., & Day-Hess, C. A. (2019). Double impact: Mathematics and executive function. *Teaching Children Mathematics*, 25(7), 416-426.
13. Kang, C. Y., Duncan, G. J., Clements, D. H., Sarama, J., & Bailey, D. H. (2019). The roles of transfer of learning and forgetting in the persistence and fadeout of early childhood mathematics interventions. *Journal of Educational Psychology*, 111(4), 590–603. <https://doi.org/10.1037/edu0000297>
14. Clements, D. H., Sarama, J., Swaminathan, S., Weber, D., & Trawick-Smith, J. (2018). Teaching and learning Geometry: Early foundations. *Quadrante*, 27(2), 7-31.
15. Germeroth, C., Bodrova, E., Day-Hess, C. A., Barker, J., Sarama, J., Clements, D. H., & Layzer, C. (2019). Play it high, play it low: Examining the reliability and validity of a new observation tool to assess children’s make-believe play. *American Journal of Play*, 11(2), 183-221.
16. Clements, D. H., Sarama, J., Barrett, J. E., Van Dine, D. W., Cullen, C. J., Hudyma, A., Dolgin, R., Cullen, A. L. & Eames, C. L. (2018). Evaluation of three interventions teaching area measurement as spatial structuring to young children. *The Journal of Mathematical Behavior*, 50, 23-41. doi:10.1016/j.jmathb.2017.12.004
17. Jenkins, J. M., Watts, T. W., Magnuson, K. A., Gershooft, E., Clements, D. H., Sarama, J., & Duncan, G. J. (2018). Do high quality kindergarten and first grade classrooms mitigate preschool fadeout? *Journal of Research on Educational Effectiveness*, 11(3), 339-374. doi:10.1080/19345747.2018.1441347
18. Celedón-Pattichis, S., Peters, S. A., Borden, L. L., Males, J. R., Pape, S. J., Chapman, O., Clements, D. H., & Leonard, J. (2018). Asset-based approaches to equitable mathematics education research and practice. *Journal for Research in Mathematics Education*, 49(4), 373–389. doi:10.5951/jresematheduc.49.4.037
19. Clements, D. H., & Sarama, J. (2018). Myths of early math. *Education Sciences*, 8(71), 1-8. doi:10.3390/educsci8020071
20. Watts, T. W., Duncan, G. J., Clements, D. H., & Sarama, J. (2018). What is the long-run impact of learning mathematics during preschool? *Child Development*, 89(2), 539–555. doi:10.1111/cdev.12713
21. Foster, M. E., Anthony, J. L., Clements, D. H., Sarama, J., & Williams, J. J. (2018). Hispanic dual language learning kindergarten students response to a numeracy intervention: A randomized control trial. *Early Childhood Research Quarterly*, 43, 83–95. doi:10.1016/j.ecresq.2018.01.009
22. Bailey, D. H., Duncan, G. J., Watts, T. W., Clements, D. H., & Sarama, J. (2018). Risky business: Correlation and causation in longitudinal studies of skill development. *American Psychologist*, 73(1), 81-94.

23. Clements, D. H., & Joswick, C. (2018). Broadening the horizons of research on discovery-based learning. *Instructional Science*, 46(1), 155-167. doi:10.1007/s11251-018-9449-1
24. Schenke, K., Watts, T. W., Nguyen, T., Sarama, J., & Clements, D. H. (2017). Differential effects of the classroom on African American and non-African American's mathematics achievement. *Journal of Educational Psychology*, 109(6), 794-811.
25. Clements, D. H., & Sarama, J. (2017). Valid issues but limited scope: A response to Kitchen and Berk's research commentary on educational technology. *Journal for Research in Mathematics Education*, 48(5), 474-482.
26. McClure, E. R., Guernsey, L., Clements, D. H., Bales, S. N., Nichols, J., Kendall-Taylor, N., & Levine, M. H. (2017). How to integrate STEM into early childhood education. *Science and Children*, 55(2), 8-10.
27. Clements, D. H., Fuson, K. C., & Sarama, J. (2017). What is developmentally appropriate teaching? *Teaching Children Mathematics*, 24(3), 178-188.
28. Aguirre, J., Herbel-Eisenmann, B. A., Celedón-Pattichis, S., Civil, M., Wilkerson, T., Stephan, M., . . . Clements, D. H. (2017). Equity within mathematics education research as a political act: Moving from choice to intentional collective professional responsibility *Journal for Research in Mathematics Education*, 48(2), 124-147.
29. Sarama, J., & Clements, D. H. (2017). Interventions in early mathematics: Avoiding pollution and dilution. *Advances in Child Development and Behavior*, 53, 95-126.
30. Day-Hess, C. A., & Clements, D. H. (2017). The DREME network: Research and interventions in early childhood mathematics. *Advances in Child Development and Behavior*, 53, 1-42.
31. Clements, D. H., Fuson, K. C., & Sarama, J. (2017). The research-based balance in early childhood mathematics: A response to Common Core criticisms. *Early Childhood Research Quarterly*, 40, 150-162.
32. Stipek, D., Franke, M. L., Clements, D. H., Farran, D. C., & Coburn, C. E. (2017). PK-3: What does it mean for instruction? *Social Policy Report*, 30(2), 1-22.
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34. Sarama, J., Clements, D. H., & Spitler, M. E. (2017). Evidence of teacher change after participating in TRIAD's learning trajectories-based professional development and after implementing learning trajectory-based mathematics. *Mathematics Teacher Education and Development*, 19(3), 58-75.
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- based on learning trajectories on teachers' practices. *Nordic Studies in Mathematics Education*, 21(4), 29–55.
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  38. Herbel-Eisenmann, B. A., Sinclair, N., Chval, K. B., Wanko, J. J., Clements, D. H., Civil, M., . . . Wilkerson, T. L. (2016). Positioning mathematics education researchers to influence storylines. *Journal for Research in Mathematics Education*, 47(2), 102–117.
  39. Nguyen, T., Watts, T. W., Duncan, G. J., Clements, D. H., Sarama, J. S., Wolfe, C., & Spitler, M. E. (2016). Which preschool mathematics competencies are most predictive of fifth grade achievement? *Early Childhood Research Quarterly*, 36, 550-560. doi: <http://dx.doi.org/10.1016/j.ecresq.2016.02.003>
  40. Clements, D. H., Sarama, J., & Germeroth, C. (2016). Learning executive function and early mathematics: Directions of causal relations. *Early Childhood Research Quarterly*, 36, 79–90. doi: 10.1016/j.ecresq.2015.12.009.
  41. Clements, D. H., Sarama, J., Wolfe, C. B., & Spitler, M. E. (2015). Sustainability of a scale-up intervention in early mathematics: Longitudinal evaluation of implementation fidelity. *Early Education and Development*, 26(3), 427-449. doi: 10.1080/10409289.2015.968242
  42. Fuson, K. C., Clements, D. H., & Sarama, J. (2015). Making early math education work for all children. *Phi Delta Kappan*, 97, 63-68.
  43. Clements, D. H., & Sarama, J. (2015). Discussion from a mathematics education perspective. *Mathematical Thinking and Learning*, 17(2-3), 244-252. doi: 10.1080/10986065.2015.1016826
  44. Fuson, K. C., Clements, D. H., & Sarama, J. (2015). Making early math education work for all children. *Phi Delta Kappan*. <http://www.kappancommoncore.org/making-early-math-education-work-for-all-children/>
  45. Foster, M. E., Anthony, J. L., Clements, D. H., & Sarama, J. (2015). Processes in the development of mathematics in kindergarten children from Title 1 schools. *Journal of Experimental Child Psychology*, 140, 56–73. doi: 10.1016/j.jecp.2015.07.004
  46. Clements, D. H., Sarama, J., Wolfe, C. B., & Spitler, M. E. (2013). Longitudinal evaluation of a scale-up model for teaching mathematics with trajectories and technologies: Persistence of effects in the third year. *American Educational Research Journal*, 50(4), 812 - 850. doi: 10.3102/0002831212469270.
  47. Szilágyi, J., Clements, D. H., & Sarama, J. (2013). Young children's understandings of length measurement: Evaluating a learning

- trajectory. *ZDM-The International Journal on Mathematics Education*, 44, 581-620. [www.jstor.org/stable/10.5951/jresematheduc.44.3.0581](http://www.jstor.org/stable/10.5951/jresematheduc.44.3.0581)
48. Sarama, J., Lange, A., Clements, D. H., & Wolfe, C. B. (2012). The impacts of an early mathematics curriculum on emerging literacy and language. *Early Childhood Research Quarterly*, 27, 489-502. doi: 10.1016/j.ecresq.2011.12.002
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  50. Clements, D. H., & Sarama, J. (2011). Early childhood mathematics intervention. *Science*, 333, 968-970.
  51. Sarama, J., Clements, D. H., Barrett, J. E., Van Dine, D. W., & McDonel, J. S. (2011). Evaluation of a learning trajectory for length in the early years. *ZDM-The International Journal on Mathematics Education*, 43, 667-680. doi: 10.1007/s11858-011-0326-5.
  52. Sarama, J., & Clements, D. H. (2011). Mathematics knowledge of low-income entering preschoolers. *Far East Journal of Mathematical Education*, 6(1), 41-63.
  53. Clements, D. H., & Sarama, J. (2011). Early childhood teacher education: The case of geometry. *Journal of Mathematics Teacher Education*, 14, 113-148.
  54. Clements, D. H., Sarama, J., Spitler, M. E., Lange, A. A., & Wolfe, C. B. (2011). Mathematics learned by young children in an intervention based on learning trajectories: A large-scale cluster randomized trial. *Journal for Research in Mathematics Education*, 42(2), 127-166.
  55. Sarama, J., & Clements, D. H. (2009). "Concrete" computer manipulatives in mathematics education. *Child Development Perspectives*, 3(3), 145-150.
  56. Sarama, J., & Clements, D. H. (2009). Teaching math in the primary grades: The learning trajectories approach. *Young Children*, 64(2), 63-65.
  57. Sarama, J., & Clements, D. H. (2009). Building blocks and cognitive building blocks: Playing to know the world mathematically. *American Journal of Play*, 1, 313-337.
  58. Klein, A., Starkey, P., Sarama, J., Clements, D. H., & Iyer, R. (2008). Effects of a pre-kindergarten mathematics intervention: A randomized experiment. *Journal of Research on Educational Effectiveness*, 1, 155-178.
  59. Clements, D. H., Sarama, J., & Liu, X. (2008). Development of a measure of early mathematics achievement using the Rasch model: The Research-based Early Maths Assessment. *Educational Psychology*, 28(4), 457-482.

60. Clements, D. H., & Sarama, J. (2008). Experimental evaluation of the effects of a research-based preschool mathematics curriculum. *American Educational Research Journal*, 45, 443-494.
61. Sarama, J., Clements, D. H., Starkey, P., Klein, A., & Wakeley, A. (2008). Scaling up the implementation of a pre-kindergarten mathematics curriculum: Teaching for understanding with trajectories and technologies. *Journal of Research on Educational Effectiveness*, 1(2), 89-119. doi: 10.1080/19345740801941332
62. Sarama, J., & Clements, D. H. (2008). Focal points—Grades 1 and 2. *Teaching Children Mathematics*, 14, 396-401.
63. Clements, D. H., & Sarama, J. (2008). Focal points—Pre-K to Kindergarten. *Teaching Children Mathematics*, 14, 361-365.
64. Brown, C. S., Sarama, J., & Clements, D. H. (2007). Thinking about learning trajectories in preschool. *Teaching Children Mathematics*, 14, 178-181.
65. Clements, D. H., & Sarama, J. (2007). Effects of a preschool mathematics curriculum: Summative research on the Building Blocks project. *Journal for Research in Mathematics Education*, 38, 136-163.
66. Clements, D. H. (2007). Curriculum research: Toward a framework for 'research-based curricula'. *Journal for Research in Mathematics Education*, 38, 35-70.
67. Barrett, J. E., Clements, D. H., Klanderma, D., Pennisi, S.-J., & Polaki, M. V. (2006). Students' coordination of geometric reasoning and measuring strategies on a fixed perimeter task: Developing mathematical understanding of linear measurement. *Journal for Research in Mathematics Education*, 37, 187-221.
68. Sarama, J., & Clements, D. H. (2006). Mathematics, young students, and computers: Software, teaching strategies and professional development. *The Mathematics Educator*, 9(2), 16-38
69. Clements, D. H., & Sarama, J. (2005). Young children's abstract mathematical thinking. *Hong Kong Journal of Early Education*, 4(1), 5-10.
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71. Clements, D. H., & Sarama, J. (2005). Math play: How young children approach math. *Early Childhood Today*, 19(4), 50-57.
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74. Clements, D. H., Wilson, D. C., & Sarama, J. (2004). Young children's composition of geometric figures: A learning trajectory. *Mathematical Thinking and Learning*, 6, 163-184.
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77. Sarama, J., Clements, D. H., Swaminathan, S., & McMillen, S., & González Gómez, R. M., (2003). Development of mathematical concepts of two-dimensional space in grid environments: An exploratory study. *Cognition and Instruction*, 21, 285-324.
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81. Clements, D. H., & Sarama, J. (2002). Mathematics curricula in early childhood. *Teaching Children Mathematics*, 9, 163-166.
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88. Lindquist, M. M., & Clements, D. H. (2001). Geometry must be vital. *Teaching Children Mathematics*, 7, 409-415.
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100. Clements, D. H., Swaminathan, S., Hannibal, M. A. Z., & Sarama, J. (1999). Young children's concepts of shape. *Journal for Research in Mathematics Education*, 30, 192-212.
101. Clements, D. H. (1999). Subitizing: What is it? Why teach it? *Teaching Children Mathematics*, 5, 400-405.
102. Henry, J. J., & Clements, D. H. (1999). Challenge for teachers attempting to integrate a mathematics innovation. *Journal of Research on Computing in Education*, 31, 240-260.
103. Clements, D. H. (1999). Teaching length measurement: Research challenges. *School Science and Mathematics*, 99(1), 5-11.
104. Clements, D. H., Sarama, J., & Battista, M. T. (1998). Development of concepts of geometric figures in a specially-designed Logo computer environment. *Focus on Learning Problems in Mathematics*, 20, 47-64.
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3. Clements, D. H. (2020, November 20). Episode #103: Learning and Teaching Early Math: An Interview With Dr. Doug Clements [Podcast]. Making Math Moments that Matter. <https://makemathmoments.com/episode103>
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5. Day-Hess, C. A., Clements, D. H., & Sarama, J. (2020, July 14). Reimagine calendar activities in early childhood classrooms [Blog post]. Development and Research in Early Mathematics Education. Retrieved from <https://dreme.stanford.edu/news/reimagine-calendar-activities-early-childhood-classrooms>

Field Code Changed



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14. Duke, Nell K., Sarama, Julie, and Clements, Douglas H. Illustrated by Scott SanGiacomo. (2016). All about castles. Connect4Learning, Lewisville, NC.
15. Clements, D. H., Guernsey, L., & McClure, E. (2016). Fostering STEM trajectories: Background & tools for action. Retrieved from New America website: <https://www.newamerica.org/education-policy/events/fostering-stem-trajectories>
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19. Clements, D. H., & Sarama, J., Baroody, A. J., Mincic, M., & Cruz, B. (2013). State Early Childhood and Pre-K-3 Policies and Best Practices for Early Mathematics. Washington, DC: National Governors Association.

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22. Clements, D. H. (2004, February). It's not all in the numbers: Nurturing your child's mathematical mind. *Parent and Preschooler Newsletter*, 19(2), pp. 1-3.

23. Clements, D. H. (2001, March). Geometric sense [1-hour video]. One of a six-part video series, "Focusing on learning mathematics in the middle years: A research perspective," produced by the Office of Superintendent of Publication Instruction, Olympia, Washington.

24. Clements, D. H. (1999, Fall). Teaching what counts: Standards of excellence. *DM Mathline*, pp. 1-2.

25. Clements, D. H., & Sarama, J. (1999). Preliminary report of Building Blocks—Foundations for Mathematical Thinking, Pre-Kindergarten to Grade 2: Research-based Materials Development (NSF Grant No. ESI-9730804). Buffalo, NY: University at Buffalo, State University of New York.

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28. Clements, D. H., & Meredith, J. S. (1993). Design of a research-based logo environment for elementary geometry. In N. Estes & M.

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29. Clements, D. H. (1992). Technology as a learning tool. In Williams, L. R., & Fromberg, D. P. (Eds.), *Encyclopedia of early childhood education* (p. 369). New York: Garland.
  30. Clements, D. H. (1992). Computers. In Williams, L. R., & Fromberg, D. P. (Eds.), *Encyclopedia of early childhood education* (pp. 370-372). New York: Garland.
  31. Clements, D. H., & Meredith, J. S. (1992). *Research on Logo: Effects and efficacy*. New York: Logo Foundation.
  32. Clements, D. H. (1983, April). *Microcomputers in early education: Rationale and outline for teacher training*. Urbana, Ill.: ERIC. (ERIC Document Reproduction Service No. ED 223 328)
  33. Clements, D. H. (1983). Training effects on the generalization of logical operations and counting strategies [Summary]. Abstracts from the 50th Biennial Meeting of the Society for Research in Child Development, 4, 47.
  34. Clements, D. H. (1982, June). *Caring about learning in 4-, 5-, and 6-year old children*. Urbana, Ill.: ERIC. (ERIC Document Reproduction Service No. ED 218 006)

#### Grants/Sponsored Programs

1. Clements, D. H., Sarama, J., Kutaka, T S.. *The Evolution of Learning Strategies as Indicators of Intervention Efficacy*. Awarded by the U.S. Department of Education, IES (Institute of Education Sciences), Grant No. R305A200100. 8/1/2020 — 7/31/2022. (2 years; \$ 565,047.60).
2. Clements, D. H., Sarama, J., Ready, D. *Learning Trajectories as a Complete Early Mathematics Intervention: Achieving Efficacies of Economies at Scale*. Awarded by the National Science Foundation (NSF), Grant No. 1908889. July 1 , 2019 – June 30, 2024. (5 years, \$4,575,683).
3. Sarama, J., Clements, D. H., Day-Hess, C. A., Watt, T. W. *Evaluating the Efficacy of an Interdisciplinary Preschool Curriculum (EPIC)*. Awarded by the U.S. Department of Education, IES (Institute of Education Sciences), Grant No. R305A190395. 7/1/2019 . (4 years; \$3,295,431).
4. Vinh, M., Lim, C., Sarama, J. Clements, D. H. *Special Education Educational Technology Media, and Materials for Individuals with Disabilities*. Office of Special Education Programs (OSEP, U.S. Dept. of Education), Federal Award No: H327G180006 Subaward No: 5112267, \$1,968,961 for subcontract from University of North Carolina). 1/1/2019-12/31/2023.
5. Germeroth, C., Clements, D. H., Sarama, J., & Day-Hess, C. *Regional Educational Laboratory: Central*. Awarded by the Institute of Education Sciences (IES, through subaward from Central Regional Education Laboratory), Grant # 2015100224. 1/3/2017- 12/31/2022 (\$1,437,401).

6. Clements, D. H. and Sarama, J. Deepening and Extending the Learning and Teaching with Learning Trajectories Tool (LT2). Awarded by the Heising-Simons Foundation, Grant #2015-157. 6/1/16 - 5/31/18. (\$510,401).
7. Clements, D. H. and Sarama, J. National Center on Early Childhood, Teaching, Learning, and Development. Awarded by the ACF (through subaward from Zero to Three), Grant # 2015100224. 10/1/2015-9/29/2019 (\$1,546,862).
8. Clements, D. H., Sarama, J., Baroody, A., J., Purpura, D. Evaluating the Efficacy of Learning Trajectories in Early Mathematics. Awarded by the U.S. Department of Education, IES (Institute of Education Sciences), Grant No. R305A150243. 8/1/2015 . (4 years; \$3,500,000).
9. Clements, D. H. and Sarama, J. Preschool-Elementary-Coherence Project (COHERE). Awarded by the Heising-Simons Foundation, Grant #2014-156 (through Stanford University, #60875796-118042). 12/1/14 – 6/30/1. (19 months; \$1,968,961.)
10. Clements, D. H. and Sarama, J. Math and Executive Function Project (EF). Awarded by the Heising-Simons Foundation, Grant #2014-156 (through Stanford University, #60875796-118042). 12/1/14 – 6/30/16. (19 months; \$114,136)
11. Clements, D. H. and Sarama, J. Learning and Teaching with Learning Trajectories (LT2). Awarded by the Bill & Melinda Gates Foundation, Grant #OPP1118932. 12/1/14 – 11/30/16. (24 months; \$679,550)
12. Clements, D. H. and Sarama, J. Scalable Professional Development in Early Mathematics: The Learning and Teaching with Learning Trajectories Tool. Awarded by the Heising-Simons Foundation, Grant #2013-79. 11/25/13 – 5/31/16. (\$500,000).
13. Clements, D. H., Sarama, J., and Baroody, A., J. Background Research for the NGA Center Project on Early Mathematics. Awarded by the National Governors Association. 7/22/2013-11/30/2013. (4 months; \$25,000).
14. Barrett, Jeffrey, Clements, D. H., and Sarama, J. Learning Trajectories to Support the Growth of Measurement Knowledge: Pre-K through Middle School. Awarded by the National Science Foundation, Elementary, Secondary, and Informal Science Education, Research on Educational Policy and Practice, NSF #DRL-1222944. June 1, 2013-May 31, 2016. (48 months; \$3,324,000; DU's portion \$1,228,297).
15. Clements, D. H., Sarama, J., and Layzer, C. Longitudinal Study of a Successful Scaling Up Project: Extending TRIAD. Awarded by the U.S. Department of Education, IES (Institute of Education Sciences, Grant No. R305A120813, previous No. R305A110188 (36 months; \$1,873,700, with an effective date of 5/1/2011).
16. Clements, D. H., Sarama, J., & Tatsuoka, C. Using Rule Space and Poset-based Adaptive Testing Methodologies to Identify Ability Patterns

- in Early Mathematics and Create a Comprehensive Mathematics Ability Test. Awarded by the National Science Foundation (48 months; \$2,488,438, with an effective date of 09/01/10; extended to 2/28/2017.), Grant No. DRL-1313695, previously DRL-1019925.
17. Sarama, J., Clements, D. H., Duke, N. & Brenneman, K. Early Childhood Education in the Context of Mathematics, Science, and Literacy. Awarded by the National Science Foundation (48 months; \$2,864,231, with an effective date of 09/01/11; end date, 8/31/2016.), Grant No. DRL-1118745.
18. Suzuka, K., Sarama, J., Clements, D. H., Walters, K., Boerst, T., Developing Teaching Expertise in K-5 Mathematics. Awarded by the National Science Foundation (48 months; \$3,292,648, with an effective date of 09/01/10; new end date, 8/31/2015.), Grant No. DRL-1118745.
19. Clements, D. H., Sarama, J., Bodrova, E., and Layzer, C. Increasing the efficacy of an early mathematics curriculum with scaffolding designed to promote self-regulation. Awarded by the U.S. Department of Education, IES (Institute of Education Sciences) (48 months; \$3,048,697, with an effective date of 6/1/2008), Grant No. R305A080200. Ends 5/31/2012).
20. Barrett, Jeffrey, Clements, D. H., and Sarama, J. A Longitudinal Account of Children's Knowledge of Measurement. Awarded by the National Science Foundation, Elementary, Secondary, and Informal Science Education, Research on Educational Policy and Practice. 8/15/2007-9/30/2012, Grant No. DRL-0732217. (60 months; \$2,786,504; UB's portion \$604,049, \$114,601 for year 1).
21. Clements, D. H., and the GSE Video Analysis Collaborative. Transforming SimpleCommenter into a Power Video Analysis Tool for Research and Teaching. Awarded by the ETC, University of Buffalo, SUNY (\$10,000, 7/1/2006).
22. Clements, D. H. and Sarama, J. Scaling Up TRIAD: Teaching Early Mathematics for Understanding with Trajectories and Technologies—Supplement. Awarded by the U.S. Department of Education, IES (Institute of Education Sciences, Grant No. R305K050157; as part of the Interagency Educational Research Initiative, or IERI program, a combination of IES, NSF, and NIH) (60 months; \$1,192,389, with an effective date of 6/1/2005).
23. Clements, D. H., Sarama, J., & Lee, J. Scaling Up TRIAD: Teaching Early Mathematics for Understanding with Trajectories and Technologies. Awarded by the U.S. Department of Education, IES (Institute of Education Sciences, Grant No. R305K050157; as part of the Interagency Educational Research Initiative, or IERI program, a combination of IES, NSF, and NIH) (60 months; \$6,000,000, with an effective date of 6/1/2005).
24. Clements, D. H., Sarama, J., Klein, A., & Starkey, Prentice. Scaling Up the Implementation of a Pre-Kindergarten Mathematics Curricula: Teaching for Understanding with Trajectories and

Technologies. Awarded by the National Science Foundation (NSF, Award # REC-0228440, as part of the Interagency Educational Research Initiative, or IERI program, a combination of NSF, U.S. Dept. of Education IES, and NIH) (24 months; \$999,672, with an effective date of 9/15/02).

25. Starkey, Prentice, Sarama, J., Clements, D. H., and Klein, A. A Longitudinal Study of the Effects of a Pre-Kindergarten Mathematics Curriculum on Low-Income Children's Mathematical Knowledge. Awarded by OERI, Department of Education as Preschool Curriculum Evaluation Research (PCER) project (full grant 48 months; \$2,607,653; \$1,065,663 for UB's portion, with an effective date of 07/15/02.).

26. Sarama, J. & Clements, D. H. [Research portion of materials development grant, in conjunction with Paul Goldenberg and others at EDC]. Learning by doing: a comprehensive K–5 mathematics curriculum for children and for their teachers. Awarded by the National Science Foundation, Instructional Materials Development (48 months; \$5,000,000 for the entire effort; \$372,000 for UB's portion, with an effective date of 06/01/01.).

27. Clements, D. H. Conference on Standards for Preschool and Kindergarten Mathematics Education. Awarded by the ExxonMobil Foundation. 12/99-11/30/2000 (\$46,189). UB #1778A. UB #150-1647A.

28. Clements, D. H., Watt, Daniel, Bjork, Elizabeth, & Lehrer, Richard. Technology- Enhanced Learning of Geometry in Elementary Schools. Awarded by the National Science Foundation, Elementary, Secondary, and Informal Science Education, Research on Educational Policy and Practice. 10/1/99-9/31/2002. (36 months; \$268,658).

29. Clements, D. H. Conference on Standards for Preschool and Kindergarten Mathematics Education. Awarded by the National Science Foundation, Elementary, Secondary, and Informal Science Education, grant number ESI-9817540. 6/17/99-5/31/2000 (9 months; \$111,275, raised to \$127,655). UB #150-1647A.

30. Clements, D. H. & Sarama, J. Building Blocks—Foundations for Mathematical Thinking, Pre-Kindergarten to Grade 2: Research-based Materials Development. Awarded by the National Science Foundation, Instructional Materials Development, grant number ESI-9730804. (48 months; \$999,807 with an effective date of 06/01/98.). UB #150-1446A

31. Sarama, J., & Clements, D. H. Planning for Professional Development in Pre-School Mathematics: Meeting the Challenge of Standards 2000. Awarded by the National Science Foundation, Teacher Enhancement Program, grant number ESI-9814218. 6/1/98-5/1/99 (full grant 12 months; \$50,000 with an effective date of 10/01/98.).

32. Battista, M. & Clements, D. H. An Investigation of the Development of Elementary Children's Geometric Thinking in Computer and Noncomputer Environments. Awarded by the National Science Foundation, Research on Teaching and Learning Program, October 1991-August 1999. \$718,978.

33. Clements, D. H. Equipment grant: Computers for Investigations in number, data, and space: An elementary mathematics curriculum. Awarded by the Apple Computer, Inc., March 26, 1991. \$21,000.
34. Clements, D. H. et al. Investigations in number, data, and space: An elementary mathematics curriculum. Awarded by the National Science Foundation, October, 1990-August 1997. \$600,000.
35. Clements, D. H., & Battista, M. Logo-based elementary school geometry curriculum project: Equipment grant. Awarded by the Apple Computer, Inc., September 21, 1987. \$2,400; project dates September 1987-August 1989.
36. Clements, D. H., & Battista, M. Development of a Logo-based elementary school geometry curriculum. Awarded by the National Science Foundation, August 27, 1986. \$525,553; project dates September 1986-August 1989.
37. Clements, D. H. Effects of Logo programming and computer-assisted instruction on cognitive, metacognition, and achievement. Research/Creative Activity Appointment, Kent State University, granted for 1985-86 academic year.
38. Clements, D. H. Development of a comprehensive program for the use of microcomputers in a school district, K-12. Awarded by the Martha Holden Jennings Foundation, 2 June 1983. \$14,150; project dates September 1983-August 1984.

Presentations/Conferences: International

1. Keynote (extended, 4 hours), Early Childhood Maths Group, Consett, U.K., March 20, 2021. From Cognition to Curriculum to Scale: Learning Trajectories for Early Math (done remotely due to COVID-19).
2. Keynote, SAARMSTE, Southern African Association for Research in Maths, Science and Technology Education, Johannesburg, South Africa, January 12-14, 2021. Learning Trajectories as Disruptors of Early Math (done remotely due to COVID-19).
3. Keynote, Erno Lehtinen Online Colloquium, University of Turku, Finland, November 18, 2020. From Cognition to Curriculum to Scale: Learning Trajectories for Early Math.
4. Keynote and workshop, Mathematics in Early Childhood, Institut für Erziehungs- und Bildungswissenschaft der Karl-Franzens-Universität Graz, Graz, Austria, March 13-14, 2020. The Surprising Importance of Early Mathematics and Children's mathematical thinking, birth to third grade: Using the Learning and Teaching with Learning Trajectories tool (done remotely due to COVID-19).
5. Norwegian National Centre of Mathematics Education at NTNU (Norwegian University of Science and Technology) in Trondheim, Norway, March 5-6, 2020. The Surprising Importance of Early Mathematics and Children's mathematical thinking, birth to third grade: Using the Learning and Teaching with Learning Trajectories tool.

6. Keynote, II(nd) International Conference on Primary Education, Bodrum, Turkey, October 23 to 27, 2019. The Surprising Importance of Early Mathematics.
7. Keynote, MERGA Conference 2019, Perth, Australia, June 30, 2019 - July 7, 2019. From Children's Thinking to Curriculum to Professional Development to Scale: Research Impacting Early Math Practice.
8. Workshop, MERGA Conference 2019, Teacher Pre-session, Perth, Australia, June 30, 2019 - July 7, 2019. Subitizing: The Neglected Quantifier.
9. Keynote, STEM Learning Ecosystems: Community of Practice Global Convening, Newport Beach, CA, November 18, 2018. The Surprising Importance of Early Mathematics.
10. Keynote, Ontario English Catholic Teachers' Association (OECTA) Kindergarten Conference, Toronto, ON, November 28-29, 2017. Kindergarten Mathematics...and More.
11. Keynote, Oman Mathematics Day III: International conference on: Trends in innovative Mathematics Curricula - Highlights on Early Mathematics Education, Muscat Oman, November 20, 2017 - November 22, 2017. Learning Trajectories — A Curriculum Core for Early Mathematics and a second presentation, STEM starts early: Grounding science, technology, engineering, and math education in early childhood.
12. International Group for the Psychology in Mathematics Education (IGPME), Singapore, July 16-21, 2017. Scale Up in Early Mathematics.
13. Ontario Kindergarten Conference, ETFO - Elementary Teachers' Federation of Ontario, Toronto, Ontario, Canada, June 1-3, 2017. Learning Trajectories — The Core of Standards, Teaching, and Learning and The Surprising Importance of Early Math.
14. Keynotes at the Mathematics and the Young Child Conference, Santiago, Chile: Learning Trajectories — The Core of Standards, Teaching, and Learning and The Surprising Importance of Early Mathematics, and one workshop, Geometry for Young Children, November 15, 2016.
15. 2016 International Mind, Brain and Education Society Conference, Fadeout and Persistence of the Effects of Early Childhood Educational Interventions: Problems and Possible Solutions, Toronto, CA, September 16-17, 2016.
16. Keynotes at the 13th International Congress on Mathematics Education, Development of Foundational Cognitions and Concepts of Measurement in the Early Years and Young Children's Conceptualization and learning of Geometric Figures, Hamburg, Germany July 24-31, 2016.
17. Keynote, Turning Desirable into Possible: The Learning Trajectories Perspective, at the International Conference, "Possible – Desirable – Plausible, Different contexts and different perspectives in research on preschool mathematics," Gothenburg, Sweden April 16 2015.



18. Keynote, Early Childhood Math Education is Surprisingly Important—Implications for the Norwegian Agderprosjekt. Norwegian Research Council, Conference on the Norwegian Agderprosjekt, Chicago, IL, December 5, 2014.
19. Keynote, The New Mathematics Curriculum: Introducing the Primary Maths Report. Also, two presentations on Measurement for Young Children and a series of podcasts. National Council for Curriculum and Assessment's Conference on Maths for Children Aged 3 to 8 Years, Dublin, Ireland, November 22-25, 2014.
20. The Building Blocks of Early Mathematics: Learning Trajectories for Young Children [Webinar], for Early Childhood Investigations, May 14, 2014. <http://www.earlychildhoodwebinars.com/presentations/the-building-blocks-of-early-mathematics-learning-trajectories-for-young-children-by-julie-sarama-and-douglas-clements/>.
21. Keynote and breakout session. Sky's the Limit Conference, DSBN Education Centre, Niagara Falls, Canada, Oct 11-12, 2013. Teaching Math to Young Children: The Paths of Early Mathematics.
22. SRCD Biennial Meeting, Seattle, WA, April 17-21 2013. Three presentations: Sustainability of Fidelity to a Prekindergarten Mathematics Curriculum and Professional Development Scale-Up Intervention; A Pre-K Mathematics Curriculum: Impacts on Early Literacy; and Effects of Preschool Mathematics Interventions on Achievement in Mathematics, Literacy, and Language and on Social-Emotional Development.
23. Keynote address, OAME (Ontario Association for Mathematics Education) Conference, Kingston, ON, Canada, May 10, 2012. Issues in Early Mathematics Education.
24. Annual Meeting of the American Educational Research Association, Vancouver, BC, Canada, April 15-18, 2012. Three papers: From Rasch Models to Rule Space and Poset-Based Adaptive Testing, Connect4Learning: Early Childhood Education in the Context of Mathematics, Science, Literacy, and The U.S. Building Blocks and TRIAD Scale-up Projects.
25. Keynote, Early Education and Technology Conference for Children (EETC), Salt Lake City, Utah, March 15-17, The Building Blocks of Math: Lessons from Research. Also, Panel, Models of Instruction.
26. Keynote address, 3rd International Realistic Mathematics Education Conference, Boulder, CO, Sep 23-25, 2011. The Design and Use of Learning Progressions in Mathematics Education.
27. SRCD Biennial Meeting, Montreal, Quebec, Canada, March 31-April 2, 2011. Six presentations: Scaling Up Successful Interventions in Diverse Environments: Longitudinal Analyses of an Early Math; A Factorial Invariance Analysis of the Early Mathematics Assessment With Prekindergarteners; Longitudinal Impacts On Rapid Automatized Naming: Results From a Large CRT on a PreKindergarten Mathematics Curriculum; Measurement of Fidelity of Implementation to a Core

Technology Component and Effects on Outcomes in a Pre-K Mathematics; Psychometrics and Validation of the Short Form of an Early Mathematics Assessment; Mathematics Learning in Early Childhood: Paths Toward Excellence and Equity.

28. Keynote address: Thinking It Through, Teaching and Learning in the Kindergarten Classroom, White Oaks, Ontario, Canada, May 28, 2010. The Building Blocks of Kindergarten Math. (invited)
29. Keynote address: OAME2010, The Ontario Association for Mathematics Education, St. Catherine's Ontario, Canada, May 13, 2010. The Building Blocks of Math. (invited)
30. Keynote address: The Erikson Institute 2010 International Symposium on Early Mathematics Education, Chicago, IL, Apr 14-15, 2010. The Building Blocks of Early Math. (invited)
31. The 11th International Congress on Mathematical Education (ICME), Monterrey, Mexico, July 7-13, 2008. Led Topical Study Group 1 and presented a paper, Scaling up Early Mathematics: The TRIAD Project.
32. The Second International Curriculum Conference, Chicago, IL, May 4, 2008. Future curricular trends in geometry. (invited)
33. Keynote address: The Year 2000 High/Scope International Conference. Ypsilanti, MI: High/Scope Foundation, May 2-5, 2000. Math and Technology in Early Childhood. (invited)
34. The 21st Conference of the International Group for the Psychology of Mathematics Education. Lahti, Finland: University of Helsinki, July, 1997. Young children's concepts of shape. With J. Sarama and S. Swaminathan.
35. Keynote address: Early Childhood Literacy Conference. October 13-15, 1999, Nassau, the Bahamas. Three presentations of: Literacy and computers in early childhood (invited)
36. Early Childhood Literacy Conference. October 13-15, 1999, Nassau, the Bahamas. Complete literacy: Language Arts, mathematics and computers (invited).
37. The Annual Meeting of the International Conference of Technology in Education. Orlando, FL, March, 1995. Effecting Change: Inhibitors and Facilitators of a Computer-based Curriculum Innovation. With J. Sarama.
38. The Annual Meeting of the International Conference of Technology in Education. Orlando, FL, March, 1995. Turtle Math: Liberating Learners of Mathematics. With J. Sarama.
39. Investigations in geometry with Geo-Logo. Brisbane, Australia: APITITE 94 Council, 1994. With Meredith, J. S., & Yelland, N.
40. International Council for Technology in Education, March, 1993. Two presentations: Design of a research-based logo environment for elementary geometry (with Julie S. Meredith); The Constructionist mirror - helping teachers find the learner inside.
41. III Congresso Brasileiro Logo, Universidade Católica de Petrópolis in Petrópolis, Rio de Janeiro, Brazil, September 1992. Logo and the

development of metacognitive and creative problem solving processes.  
(invited)

42. Geometry Working Group, International Group for the Psychology of Mathematics Education, Sixteenth Annual Conference, Durham, New Hampshire, August 1992. Advantages and disadvantages of computer environments for specific objectives in geometry teaching. (invited)

43. International Group for the Psychology of Mathematics Education, Sixteenth Annual Conference, Durham, New Hampshire, August 1992. Design of a logo environment for elementary geometry.

44. International Group for the Psychology of Mathematics Education, Sixteenth Annual Conference, Durham, New Hampshire, August 1992. Students' cognitive construction of squares and rectangles in logo geometry.

45. Geometry Working Group, International Group for the Psychology of Mathematics Education, Fifteenth Annual Conference, Assisi, Italy, July 1991. Students' construction of geometric concepts in Logo environments. (invited)

46. International Group for the Psychology of Mathematics Education, Fifteenth Annual Conference, Assisi, Italy, July 1991. Van Hiele levels of learning geometry. With M. Battista.

47. III International Symposium for Research in Mathematics Education, Valencia, Spain, June 1991. Research and curricular changes 5-16. (invited)

48. III International Symposium for Research in Mathematics Education, Valencia, Spain, June 1991. Elementary geometrical concepts. (invited)

49. NATO Advanced Research Workshop, Computer-based Learning Environments and Problem Solving, Leuven, Belgium, September 1990. Development of higher-order thinking in Logo environments. (invited)

50. International Group for the Psychology in Mathematics Education—North American Chapter, DeKalb, IL, November 1988. The development of geometric conceptualizations in Logo. With M. Battista.

Presentations/Conferences: National

1. Annual Meeting of the National Council of Teachers of Mathematics (NCTM), Virtual, November 17-20, 2021. LT-Squared—Learning and Teaching with Learning Trajectories Tool: Support for Professional Learning.

2. NAEYC DAP Conference (National Association for the Education of Young Children), Washington, DC (virtual). Playful Learning + DAP Promotes the Development of Math (and more).

3. Annual Meeting of the American Educational Research Association (AERA), Orlando, FL (but conducted virtually), April 9-12, 2021. Seven papers: Homogeneity of Relations between Mathematics and Executive Function Competencies in the Context of an Intervention; Exploring Relations between Classroom-level Strategic Diversity and Achievement in Early Mathematics; Classroom Strategy Diversity and

Student Growth in Early Mathematics: A Multigroup Latent Growth Analysis; Learning Trajectories as the Core of Teacher Professional Development; Development of a Measure of Early Mathematics Achievement based on Learning Trajectories; Effects of a Math Intervention on Dual Language Learners and Children with Disabilities; and Moving Across a Counting Learning Trajectory Strengthens Arithmetic Strategies for Kindergarteners At-Risk for Math Difficulties.

4. Three presentations, the 2021 Virtual Biennial Meeting of the Society for Research in Child Development (SRCD), April 7-9, 2021. Associations Between Use of Scaffolds and Preschooler's Accuracy and Working Memory During Early Geometry Instruction, Teaching Moves Associated With Preschoolers' Arithmetical Accuracy and Working Memory, and Exploration of Theoretical and Empirical Congruence in a Measure of Early Math.
5. Keynote, ECSTEM 2021, Children's Center at Caltech, Pasadena, CA (online), February 23-26, 2021. Supporting Professional Learning Communities in Early Math: Learning and Teaching with Learning Trajectories.
6. Webinar, STEMI2E2, UNC/DU, Denver, CO, February 3, 2021. What Counts in Teaching and Learning ALL Young Children? – Learning Trajectories for Young Children.
7. National Council on Measurement in Education Annual Meeting, Baltimore, MD, June 8-11, 2021. Measuring Strategic Diversity in Classrooms.
8. Keynote, 2020 Consortium on Early Childhood Intervention Impact, Laguna Beach, CA, November 4-6, 2020. Learning Trajectories From Cognition to Scale.
9. Three presentations, NAEYC Annual Conference & Expo (National Association for the Education of Young Children), Anaheim, CA, November 4-7, 2020 (cancelled due to pandemic). Children's mathematical thinking, birth to third grade: Using the Learning and Teaching with Learning Trajectories tool to teach geometry, STEAM Ahead with Interdisciplinary Teaching and Learning: Science, Technology, Engineering, Arts, Math... and Literacy and Social-emotional Development, and Supporting Early Mathematics Development: Research-Based Practices and Resources for Teacher Educators, Teachers, and Family-facing Professionals.
10. Keynote, Curriculum and Instruction Steering Committee Symposium, Fresno, CA, June 26, 2020. What Counts in Teaching and Learning Early Math? Learning Trajectories for Young Children. Attended by 7,300 participants.
11. Annual Meeting of the American Educational Research Association (AERA), San Francisco (but conducted virtually), April 17-21, 2020. Ten papers: Learning Trajectories as Boundary Objects for Psychometricians, Learning Scientists and Practitioners in Mathematics Education, Pre-School Mathematics Intervention Can Significantly

Improve Student Learning Trajectories Through Elementary School, Research in Practice to Improve PK-grade 3 Math Learning, What Teaching Moves Support Young Children's In-The-Moment Ability to Solve Simple Addition and Subtraction Problems?, Examining the Efficacy of a Learning Trajectories Intervention for Arithmetic: A Sequential Explanatory Mixed-Method Approach, Young children's mathematical patterning competencies: Insights and future directions, Does a Learning Trajectory Facilitate Learning to Recognize the Core Unit of a Repeating Pattern?, An Empirical Study to Investigate the Relative Difficulty of Repeating Pattern Structures for Preschoolers, Strategy Diversity in Early Mathematics Classrooms, and Mathematics and Executive Function Competencies in the Context of Interventions: A Quantile Regression Analysis.

12. Keynote, AERA Institute on Statistical Analysis for Education Policy: Development of Math Skills in Early Childhood, American Educational Research Association, Laguna Beach, CA, February 23-24, 2020. Early Math Development.

13. Association of Mathematics Teacher Educators, Phoenix, AZ, February 5-8, 2020. AMTE Standards for Mathematics Teacher Preparation.

14. Two presentations, NAEYC Annual Conference & Expo (National Association for the Education of Young Children), Nashville, TN, November 20-23, 2019. Children's mathematical thinking, birth to third grade: Using the Learning and Teaching with Learning Trajectories tool to teach arithmetic! and Differentiating teaching in early math: Environments, interactions, and activities for playful, developmentally appropriate learning.

15. Webinar for Association of State Supervisors of Mathematics (ASSM), October 16, 2019. [LT]2—Learning and Teaching with Learning Trajectories Tool: Support for Professional Learning.

16. Webinar for the annual meeting of the Association of State Supervisors of Mathematics (ASSM), Sept. 10, 2019 The Surprising Importance of Early Math and the Learning and Teaching with Learning Trajectories Tool.

17. Two presentations, NAEYC PDI (National Association for the Education of Young Children's Professional Development Institute, Long Beach, CA, June 2-5, 2019. Self-paced learning about children's math thinking, with playful activities: Using the Learning and Teaching with Learning Trajectories tool and Supporting early mathematical development everywhere: Resources for teacher educators, teachers, caregivers, and families.

18. Annual Meeting of the American Educational Research Association (AERA), Toronto, Ontario, Canada, April 3-9, 2019. Four papers: Does a Learning Trajectory Facilitate Early Patterning Intervention?; Length Measurement in the Early Years: Teaching and Learning with Learning Trajectories; Efficacy of Learning Trajectory-

Based Number and Shape Computer Games for Young Children; and Comparing a Learning Trajectory Approach to a Teach-to-the-Target Approach in Kindergarten Arithmetic.

19. Annual Meeting of the National Council of Teachers of Mathematics (NCTM), San Diego, CA., April 2-7, 2019. Honoring the Student in Designing Instruction: Learning and Teaching with Learning Trajectories.

20. The Biennial Meeting of the Society for Research in Child Development (SRCD), Baltimore, MD, March 20-23, 2019. Five papers (4 in one symposium): Interdisciplinary teaching across multiple domains: Efficacy of the C4L (Connect4Learning) Curriculum; Investigating Children's Structure, Interpretation and Representation of Space with an Intervention for Measuring Prism Volume; Investigating Children's Structure, Interpretation and Representation of Space with an Intervention for Measuring Prism Volume; Young Children's Actions on Length Measurement Tasks: Strategies and Cognitive Attributes; and Length Measurement in the Early Years: Teaching and Learning with Learning Trajectories.

21. Annual SREE Conference, Society for Research on Educational Effectiveness, Washington, D.C. (March 9, 2019). Comparing a Learning Trajectory Approach to a Teach-to-the-Target Approach in Early Arithmetic.

22.

23. Keynote. Annual AMTE (Association of Mathematics Teacher Educators) Conference, Orlando, FL, February, 8, 2019. The Learning and Teaching with Learning Trajectories tool, and Elaborations of the Standards for the Preparation of Early Childhood Teachers of Mathematics.

24. NAEYC Annual Conference & Expo, Washington (National Association for the Education of Young Children), DC, November 15-18, 2018. Three presentations: Self-paced learning about children's math thinking, with playful activities: The Learning and Teaching with Learning Trajectories tool; Supporting early mathematics development: Research-based practices and resources for teacher educators, teachers, and families; and C4L: STEAM ahead with interdisciplinary teaching and learning.

25. NAEYC's National Institute for Early Childhood Professional Development, Austin, TX, June 10-13 2018. An open-access Internet application for professional development in early math: The Learning and Teaching with Learning Trajectories tool.

26. NSF DRK-12 PI Meeting, Washington, DC, June 7-8, 2018. Three presentations—two papers: The Ongoing Process of Validating and/or Adapting Learning Trajectories Over Time and Achieving Broader Impacts of Research Through Dissemination (refereed); and chair of one roundtable discussion, DRK-12 Early Learning Topical Group Synthesis Feedback.

27. 45th Annual National Head Start Conference and Expo, Anaheim, CA, April 25-27, 2018. Two presentations: Self-paced learning about children's math thinking, with playful activities: The Learning and Teaching with Learning Trajectories Tool and Social-emotional Development STEAMS Ahead.
28. Annual Meeting of the National Supervisor of Teachers of Mathematics (NCSM), Washington, D.C., April 23-24, 2018. Two presentations: Learning Trajectories at the Core: Effective and Powerful Professional Development; and It Takes a [Mathematics Education] Village to Prepare a Mathematics Teacher.
29. Annual Meeting of the National Council of Teachers of Mathematics (NCTM), Washington, D.C., April 23-25, 2018. Three presentations: Length Measurement in the Early Years: Teaching with Learning Trajectories; Review of Assessments of Mathematics in Early Childhood; and Review of Early Childhood Mathematics Curricular Activities.
30. Annual Meeting of the American Educational Research Association (AERA), New York, NY, April 13-17, 2018. Two presentations: Evaluating the Efficacy of a Learning Trajectory for Early Shape Composition; and Comprehensive Review of Assessments of Mathematics in Early Childhood.
31. Keynote, Mathematics Matters in Education Conference: Professional Development in Mathematics for Elementary School Teachers, College Station, TX, April 6-8, 2018. Sustainable, Scalable Professional Development in Early Mathematics: Strategies, Validation, and Tools.
32. Spring 2018 SREE Conference. February 28-March 2, 2018, Washington, DC. Evaluating the Efficacy of a Learning Trajectory for Early Shape Composition.
33. Keynote, CCSSO's State Collaborative on Assessment and Student Standards (SCASS) Winter Meeting, Miami, FL, February 22-23, 2018. Curricular Alignment in Math for PreK to Grade 2.
34. Keynote. Annual AMTE (Association of Mathematics Teacher Educators) Conference, Houston, Texas, February 7-10, 2018. Collaborating to Align Programs with the Standards for Preparing Teachers of Mathematics, and Elaborations of the Standards for the Preparation of Early Childhood Teachers of Mathematics.
35. Keynote. CCSSO Networked Improvement Community Project, Arlington, VA, January 22, 20-18. The Surprising Importance of Early Mathematics and How to Support It.
36. NCSL (National Conference of State Legislatures), Denver, CO, September 18, 2017. STEM in the Early Years.
37. Quality Rating and Improvement Systems (QRIS) National Meeting, Dallas, TX, June 27-29, 2017. Connect4Learning: Teaching and Learning the Interdisciplinary Way.

38. National Academies of Sciences, Engineering, and Medicine— Stakeholder convening on early science, technology, engineering, and mathematics learning and young dual language learners, Washington, DC, May 24-25, 2017. Reflections on the Report, Promoting the Educational Success of Children and Youth Learning English: Promising Futures and Implications for DLL/EL Children’s STEM Learning.

39. Annual Meeting of the American Educational Research Association (AERA), San Antonio, TX, April 27-May 1, 2017. Four in a symposium: The TRIAD Scale-up Model and Its Effects: Teaching Early Mathematics with Trajectories and Technologies, Effects of Implementation Variables on an Early Mathematics Intervention Based on Learning Trajectories, Sustainability—Longitudinal effects of an early mathematics intervention based on learning trajectories on teachers' practices, and Persistence of Effects of an Early Mathematics Intervention Based on Learning Trajectories on Students’ Math. Also, Roundtable, Examination of Children’s Strategy Use on Geometric Measurement Assessment Items.

40. The Biennial Meeting of the Society for Research in Child Development (SRCD), Austin, TX, April 6-8, 2017. Seven papers (four in one symposium) and one discussant role. Symposium, " Longitudinal Evaluation of a Scale-up Model: Critical Components and Effects on Persistence and Sustainability," with four papers: The TRIAD Scale-up Model and Its Effects: Teaching Early Mathematics with Trajectories and Technologies, Effects of Implementation Variables on an Early Mathematics Intervention Based on Learning Trajectories, Sustainability—Longitudinal effects of an early mathematics intervention based on learning trajectories on teachers' practices, and Persistence of Effects of an Early Mathematics Intervention Based on Learning Trajectories on Students’ Math;. Three additional papers: Effects on Mathematics and Executive Function of a Mathematics and Play Intervention Versus Mathematics Alone; Risky Business: Correlation and Causation in Longitudinal Studies of Skill Development; and Play it High, Play it Low—Examining the Reliability and Validity of a New Observation Tool to Assess Children’s Make-Believe Play. Discussant on The Impact of Charter School Enrollment on Low-Income Children’s Early Math Trajectories.

41. Research Pre-session, National Council of Teachers of Mathematics, San Antonio, TX, April 3-5, 2017. Three presentations: Evaluating the Efficacy of Learning Trajectories in Early Math— Experiment 1; Amplifying Equity within Mathematics Education Research: From Choice to Collective Responsibility; and Preparing the Next Generation of Teachers of Mathematics: Implications for Mathematics Leaders.

42. Annual Meeting of the ProLEER (Professional Learning network to advance Early Education Reform) Network, Cambridge, MA, March



- 27-29, 2017. Curriculum Research Framework and the TRIAD Scale-up Model.
43. Invited Presentation, U.S. Dept. of Education, Washington, DC, November 29, 2016. Connect4Learning—Interdisciplinary Teaching and Learning.
44. NAEYC Annual Conference & Expo, Washington, DC, November 2-5, 2016. Two presentations: The building blocks of early childhood mathematics and C4L (Connect4Learning): Teaching and Learning the Interdisciplinary Way.
45. Keynote. 4th Annual AMTE-TX Fall 2016 Conference, Abilene, Texas, September 24, 2016. Preparing Teachers for Tomorrow's Classrooms.
46. Keynote and multiple presentations. The Administration for Children and Families' (ACF) National Research Conference on Early Childhood, Washington, DC, July 11-13, 2016. Keynote/Master Lecture: Promoting Early Math: Advances in Understanding Who to Teach What; Presentations: Changes in Teacher Practices: The Effects of Three Professional Development Models, Preparing for Success in School - What Matters the Most, The Role of Content and Coaching Expertise in the Effectiveness of Coaching: Results from a Large Cluster Randomized Trial, Persistent Effects for Early Childhood Educational Programs: Longitudinal Follow-Up from Three Randomized Trials
47. Learning Trajectories for Young Children [Webinar], for Early Childhood Investigations, June 15, 2016. 750 participants.
48. NAEYC's National Institute for Early Childhood Professional Development, Baltimore, MD, June 6-8 2016. Comprehensive review of assessments of mathematics in early childhood.
49. White House Convening, Washington, DC, May 31-June 1, 2016, STEM & Early Learning.
50. 43rd Annual Head Start Conference & Expo, Nashville, TN, May 17-18, 2016. Scalable Professional Development in Early Mathematics: The Learning and Teaching with Learning Trajectories Tool and The C4L (Connect4Learning) Project: Teaching and Learning the Interdisciplinary Way.
51. Congressional Briefing, Washington, DC, May 12, 2016, The Surprising Importance of Early Mathematics.
52. White House STEM Summit, Washington, DC, April 21 2016, The Surprising Importance of Early Mathematics.
53. Presentation, 2016 Leadership Connections National Conference, McCormick Center for Early Childhood Leadership, Wheeling, IL, May 13, 2016. Connect4Learning—Interdisciplinary Teaching and Learning. (invited)
54. Plenary Session, National Council of Teachers of Mathematics, San Francisco, CA, April 13-16, 2016. Presentation: The Common Core in Early Math and Developmental Appropriateness.

55. Research Pre-session, National Council of Teachers of Mathematics, San Francisco, CA, April 12-13, 2016. Two papers: How do children really measure? – Strategy use on assessment tasks; and Structuring two and three-dimensional space: A focus on representations.
56. Annual Meeting of the American Educational Research Association, Washington, DC, April 7-12, 2016. Three presentations, The Role of Forgetting in the Fade-Out of the Effect of an Early Mathematics Intervention; Effects of an Early Mathematics Intervention on Stable and Time-Varying Components of Mathematics Achievement; and Discovery-Based STEM Learning 2.0: Are We There Yet?
57. Keynote, Society for Research and Human Development, Denver, CO, March 18, 2016. The Surprising Importance of Early Mathematics.
58. SREE — Society for Research on Educational Effectiveness Annual Conference, Washington, DC, March 3-5, 2016. Two presentations: Effects of TRIAD on Mathematics Achievement: Long-Term Impacts? and A Randomized Control Trial Evaluating the Effectiveness of Computer Assisted Instruction in Numeracy on Math Outcomes for Monolingual English Speaking Kindergartners from Title I Schools (refereed)
59. Two presentations and 2 working groups, AMTE (Association of Mathematics Teacher Educators), Irvine, CA, January 28-30, 2016. Learning to learn from teaching: A different kind of professional development outcome and AMTE's standards for mathematics teacher preparation: Share your input.
60. Invited presentation, IES PI Conference, Washington, DC, December 10-11, 2015, The Curriculum Research Framework.
61. Congressional Briefing and U.S. Department of Education Briefing Washington, DC, September 24-25, 2015, The Building Blocks and TRIAD Research and Development Projects.
62. 8th Annual Fair Share Nation, "Building Blocks of Early Math," University of Denver, Denver, CO, September 26, 2015.
63. Connecting Number and Operations in the Classroom (NCTM Summer Institute), National Council of Teachers of Mathematics, New Orleans, July 23, 2015 - July 25, 2015. Learning trajectories for number and operations.
64. Keynote presentation, U.S. News STEM Solutions Conference, San Diego, CA, July 1, 2015. Building Blocks of Math.
65. Keynote presentation, Annual Conference, National Association of Elementary School Principals (NAESP), Long Beach, CA, June 30, 2015. Early Math: Policies and Practice.
66. NGA Early Math Policy Consultation Project, May 27-28, 2015 St. Louis, MO, National Governors' Association, three presentations, Standards; Innovations in Early Childhood STEM Curricula; and Professional Development.
67. Research Pre-session of the National Council of Supervisors of Mathematics, Boston, MA, April 13-14, 2015. Presented a paper,

Professional development that supports teachers' use of learning trajectories.

68. Annual Meeting of the American Educational Research Association, Chicago, IL, April 16-20, 2015. Presented two papers, Children's Estimation and Measurement of Area, and Which Kindergarten Common Core domains are most predictive of later mathematics achievement?

69. Biennial Meeting, SRCD, Society for Research in Child Development, Philadelphia, PA, March 19-21, 2015. Six papers. Math and math + scaffolded play interventions: Analyses of main effects on development of math competence and executive function; Using Q-matrix & Rule-Space to refine cognitive attributes and test items when developing an assessment of geometric measurement; C4L (Connect4Learning): Interdisciplinary Early Childhood Education—Math, Science, Literacy, and Social-emotional Development; Longitudinal Evaluation of a Scale-up Model for Teaching Mathematics: Persistence of Effects Three Years after Treatment; Early math skills and later achievement: Which kindergarten common core domains most predict fifth grade math achievement?; Longitudinal evaluation of a scale-up model for teaching mathematics with trajectories and technologies: Persistence of effects.

70. SREE — Society for Research on Educational Effectiveness Annual Conference, Washington, DC, March 5-7, 2015. Four presentations: Great Expectations: The Effect of High Teacher Expectations on the Mathematics Achievement of African American Students in a Preschool Math Intervention; Preventing Preschool Fadeout through Instructional Intervention in Kindergarten and First Grade; Fadeout in an Early Mathematics Intervention: Same Old Schools or Underlying Skills? What Specific Preschool Math Skills Predict Later Math Achievement? Also, chair of the session, Education and Social Inequality Interventions to Improve Math Skills. (refereed)

71. Presentation, invited, National Council of State Legislatures (NCSL) Early Learning Fellows Meeting, Minneapolis, MN, August 19, 2014. Math in the Early Years: The Surprising Importance of Early Mathematics.

72. Two presentations, Head Start Research Conference (HSRC), Washington, DC, June 7-8, 2014. Transitions, Continuity, and Alignment in Early Childhood and Innovations in Early Childhood STEM Curriculum and Professional Development.

73. Presentation, ACF Meeting, Early Elementary School Experiences & Sustaining the Effects of Early Childhood Education, Washington, DC, May 19-20, 2014. Building Blocks and TRIAD: Sustainability and Persistence of Effects.

74. Research Pre-session of the National Council of Teachers of Mathematics, New Orleans, LA, April 7-10, 2014. Presented four papers, "Measurement Club" – Helping to Fill an Educational Gap; Research to

Practice: Measuring Length in First Grade; Interactions among Learning Trajectories for Length, Area, and Volume Measurement; Conceptualizing and Supporting Development: Learning Area Measurement in School.

75. Annual Meeting of the American Educational Research Association, Philadelphia, PA, April 3-7, 2014. Presented seven papers, including a Presidential Address; From Research to Practice: Measuring Length in First Grade; Supporting Children's Learning of Area Measurement: A Microgenetic Study; Self-Regulation Impacts (Executive Function, Working Memory) of an Intervention Synthesizing Early Mathematics and Make-Believe Play; Approaches to Incorporating Late Pretests in Experiments: Evaluation of Two Early Mathematics and Self-Regulation Interventions; Impacts on Mathematics of an Intervention Synthesizing Early Mathematics and Make-Believe Play; Impacts on Oral Language of an Intervention Synthesizing Early Mathematics and Make-Believe Play; Policies Supporting Scale-Up of Interventions for Children at Risk in Early Mathematics; discussant on one session, Facets of Large-Scale Evaluation Illustrated With ST Math: Examining Outcomes, Mediators, and Moderators; and co-chair of one session, Efficacy of an Intervention Synthesizing Scaffolding Designed to Promote Self-Regulation With an Early Mathematics Curriculum.

76. Planned, Managed, Conducted, Wrote Background Briefs, and Keynoted at the NGA Early Math Expert Roundtable, Washington, DC, November 21, 2013.

77. NAEYC Annual Conference & Expo, Washington, DC, November 21, 2013. Two presentations: Report of the NRC Committee on Early Mathematics and Science, Math, Literacy, and Social-emotional Development in Early Childhood—Can We Do It All?

78. Keynote, 9th Annual NALEO National Summit on the State of Latino Education, Washington, DC, Oct. 1, 2013. Planting the Seed: STEM in Early Learning. (invited)

79. Keynote, Institute of Education Sciences Principal Investigators' Annual Meeting, Washington, DC, September 26, 2013. The Common Core: Implications for STEM Education Research. (invited)

80. SREE — Society for Research on Educational Effectiveness Annual Conference, Washington, DC, Sept. 27-28, 2013. Two presentations: Longitudinal Evaluation of a Scale-Up Model for Teaching Mathematics with Trajectories and Technologies: Persistence of Effects Three Years after the Treatment and Approaches to Incorporating Late Pretests in Experiments: Evaluation of Two Early Mathematics and Self-Regulation Interventions. (refereed)

81. Connecting Number and Operations in the Classroom (NCTM Summer Institute)," National Council of Teachers of Mathematics, New Orleans, July 12, 2013 - July 14, 2013. Learning trajectories for number and operations.

82. Scaling Educational Innovations, National Science Foundation, Arlington, Virginia, July 11, 2013. Evaluation of a Scale-up Model: Effects and Diffusion.
83. Keynote, 2013 National Forum on Education Policy, Education Commission of the States, St. Louis, MO. June 25, 2013 - June 27, 2013. The surprising importance of early mathematics.
84. Mathematical Instruction for Perseverance, Spencer Foundation and the National Science Foundation, Chicago, Illinois, June 23, 2013 - June 24, 2013. Evaluation of a Scale-up Model for Children of Poverty: Persistence of Effects and Effects on Perseverance.
85. Transitions, Continuity and Alignment: Preschool to Third Grade, Administration for Children and Families, Washington, D.C., June 18, 2013 - June 19, 2013. Evaluation of a Scale-up Model for Children of Poverty: Transitions to Primary School.
86. Jean Piaget Society Conference, American Educational Research Association, Chicago, IL, June 6, 2013 - June 8, 2013. Framing and Revising a Hypothetical Learning Trajectory for Volume Measurement.
87. Annual Meeting of the American Educational Research Association, San Francisco, CA, April 28-May 1, 2013. Three papers: Scale Up at the Level of Multiple School Districts: Lessons Learned from Multiple IERI- and IES-Funded Projects; Framing and Revising a Hypothetical Learning Trajectory for Volume Measurement: Integrating Longitudinal Case Studies and the Rasch Model; and Evaluation of a Scale-up Model for Children of Poverty: Longitudinal Study of Persistence of Effects.
88. Annual Meeting of the National Council of Teachers of Mathematics, Denver, CO, April 17-20, 2013. Two presentations: Math Lessons from Research and Computers in Early Childhood: Getting the Best of All Worlds.
89. Research Pre-session, National Council of Teachers of Mathematics, Denver, CO, April 15-17, 2013. Two papers: Creating cognitively diagnostic adaptive assessments using learning trajectories; and Framing and Revising a Hypothetical Learning Trajectory for Area Measurement.
90. Keynote, Association of the State Supervisors of Mathematics 2013 Annual Meeting, Denver, CO, Apr 13, 2013. The Building Blocks of Mathematics. (invited)
91. National Center for Early Child Education (NCRECE) Quality Improvement Meeting, Washington, DC, Mar 19, 2013. Early mathematics: Standards, Assessment, and Curriculum. (invited)
92. Aligning and Implementing Birth-3rd Grade Learning Standards: A Strong Foundation for College and Career Readiness, Co-sponsored by the NGA Center for Best Practices and the Council of Chief State School Officers Philadelphia, PA, Mar 15, 2013. The surprising importance of early mathematics. (invited)

93. SREE — Society for Research on Educational Effectiveness Annual Conference, Washington, DC, Mar 9, 2013. Sustainability of Fidelity of Implementation Over Time, in the Context of a Prekindergarten Mathematics Curriculum and Professional Development Scale-Up Intervention. (refereed)
94. Institute of Education Sciences Principal Investigators' Annual Meeting, Washington, DC, Mar 5-6, 2013. Longitudinal effects of a research-based model of scale-up. (refereed)
95. Institute of Medicine / National Research Council Board On Children, Youth, And Families, Bridging the Early Years to the Early Grades: A Planning Meeting, National Academy of Sciences, Washington, DC: July 9-10, 2012. Developmental science.
96. NSF DR K-12 PI Meeting, Washington, DC, June 13-15, 2012. Three papers. Using Rule Space and Poset-based Adaptive Testing Methodologies to Identify Ability Patterns in Early Mathematics and Create a Comprehensive Mathematics Ability Test; Learning Progressions and Trajectories in Research: Methodological and Theoretical Challenges; Meeting the Challenges and Reaping the Benefits of Longitudinal Research Studies in Math and Science for DR K-12 Projects; and one poster, Connect 4 Learning: An interdisciplinary preschool curriculum. (refereed)
97. Annual Meeting of the National Council of Teachers of Mathematics, Philadelphia, PA, April 25-27, 2012. Research in early mathematics.
98. Research Pre-session, National Council of Teachers of Mathematics, Philadelphia, PA, April 22-24, 2012. Three presentations: Teachers' Learning of Learning Trajectories, Measurement Club: Filling a Developmental Gap, and Effects of Building Blocks games on young children's learning.
99. SREE — Society for Research on Educational Effectiveness Annual Conference, Washington, DC, March 7, 2012. The Efficacy of an Intervention Synthesizing Scaffolding Designed to Promote Self-Regulation with an Early Mathematics Curriculum: Effects on Executive Function. (refereed)
100. Invited speech, U.S. Department of Education, Washington, DC, March 13, 2012. Critical Early Mathematics from Cognitive Science to Scale.
101. Keynote presentation, AMTE (Association of Mathematics Teacher Educators), Fort Worth, TX, Feb 10, 2012. What research can and cannot tell us.
102. Keynote presentation, National Science Board's meeting of the Committee on Education and Human Resources (CEH), Washington, DC, Dec 13, 2011. Educational research: From basic to applied and beyond.
103. Keynote presentation, opening the conference, Pathways for Supporting Early Math Learning, Heising-Simons Foundation, Berkeley, CA, Nov 7-8, 2011. Research on pathways for early mathematics.

104. NAEYC Annual Conference & Expo, Orlando, FL, November 1-2, 2011. Connect4Learning: Early Childhood Education in the Context of Mathematics, Science, and Literacy.
105. PME-NA, Psychology in Mathematics Education. Two presentations, both invited: (1) Learning Trajectories: Foundations for Effective, Research-based Education; (2) Studying Mathematics Conceptual Learning: Student Learning through their Mathematical Activity [Discussant]. Denver, CO, October 19-23, 2011. (both invited)
106. SREE — Society for Research on Educational Effectiveness, First Annual Math & Science Conference. Four presentations: (1) Early Childhood Education Symposium: Development, Implementation, and Evaluation of Preschool Mathematics and Science Intervention Models; (2) Pathways from R&D to Marketplace Dissemination; (3) Early Mathematics Education for All: Evaluation of an Intervention Using Multiple Methodologies and (4) Outcomes, and Assessment in Early Childhood Mathematics and Science. Washington, DC, September 7-9, 2011. (two invited, two refereed)
107. The Annual Meeting of the American Educational Research Association, New Orleans, LA, April 8-11, 2011. Six sessions: Scaling Up Successful Interventions in Diverse Environments: Longitudinal Analyses of an Early Math Intervention; Children's Strategies for Solving Mathematical Problems: Analyses Within an Experimental Evaluation of an Early Mathematics Curriculum; Measurement of Fidelity of Implementation to a Core Technology Component and Effects on Outcomes in a Prekindergarten Mathematics Scale-Up Intervention; A Hypothetical Learning Trajectory for Volume in the Early Years; Measuring a Learning Progression for Data Modeling: Psychometric Modeling and Issues (Discussant); Mathematics and Science in Early Childhood Education \*Chair).
108. Advisory Committee on Head Start Research and Evaluation April 12 – 13, 2011, Arlington, VA. Mathematics for Head Start: Research and Evaluation.
109. Research Pre-session, National Council of Teachers of Mathematics, Washington, DC, April 11-13, 2011. Two presentations: Examining Learning Progressions, Trajectories, and Levels: Beyond Scope and Sequence; Measurement Research and Practice.
110. Annual Meeting of the National Council of Teachers of Mathematics, Washington, DC, April 13-15, 2011. Math Lessons from Research.
111. SREE — Society for Research on Educational Effectiveness Second Annual Conference, Early Childhood Education Symposium: The Effects of Pre-Kindergarten and Pre-Kindergarten Curricula on Emergent Math and Literacy Skills, and a poster, Evaluation of the TRIAD Scale-up Model: Longitudinal evaluation Washington, DC, March 4, 2011. (refereed)

112. NSF DR K-12 Conference, Washington, DC, December 1-3, 2010. Presentations: Scientific Curriculum Development: A Framework for Research-based Curriculum and poster, Measurement in Pre-K – Grade 5.
113. Keynote, opening of the Institute for Research on Mathematics and Science Education conference, “Research in Mathematics Education: Where Do We Go from Here?” Washington, DC. What do we know about content and curriculum?
114. Institute of Education Sciences Research Conference, Washington, DC, June 28-30, 2010. Presentations: Scaling Up TRIAD: Teaching Early Mathematics for Understanding with Trajectories, and Efficacy of Computerized Earobics and Building Blocks Instruction for Kindergarteners from Low SES, Minority Backgrounds: Year 2 Results, also Discussant, Improving Math Outcomes in Elementary Schools.
115. Head Start’s Tenth National Research Conference, Washington, DC, June 21-22, 2010. Two presentations: Report of the NRC Committee on Early Childhood Mathematics: Evidence of Effective Policies and Practices for Math Education, and Children’s Understanding of Mathematics and Science Concepts in the Preschool Years.
116. Council of Chief State School Officers (CCSSO) Briefing, The Common Core State Standards: K-3, March 25, 2010, One Massachusetts Avenue NW, Washington, DC, Washington, DC.
117. The Annual Meeting of the American Educational Research Association, Denver, CO, May 1-4, 2010. Five presentations: Hypothetical Learning Trajectory for Length in the Early Years; Life After RCTs: Addressing the Issue of Palatability of Instructional Interventions: The TRIAD / Building Blocks Scale-Up Project: Effectiveness and Diffusion; Evaluation of a Developmental Progression for Length Measurement Using the Rasch Model; Scaling Up Successful Interventions in Diverse Environments: Longitudinal Analyses of an Early Math Intervention; Effects of an Early Math Curriculum on Early Literacy and Language: Impacts, Mediators, and Moderators.
118. Research Pre-session, National Council of Teachers of Mathematics, San Diego, CA, April 18-19, 2010. Four presentations: Defining and Implementing Learning Trajectories as Research Tools; Math Learning in Early Childhood: Paths Toward Excellence and Equity – NRC; Tools of the Trade; A Discussion about Standards.
119. Annual Meeting of the National Council of Supervisors of Mathematics, San Diego, CA, April 19, 2010. Report of the NRC Committee on Early Childhood Mathematics.
120. Annual Meeting of the National Council of Teachers of Mathematics, San Diego, CA, April 19-23, 2010. The National Research Council Report on Early Mathematics—Implications for Teaching.
121. U.S. House of Representatives Education Caucus Briefing, Mathematics Learning in Early Childhood: Paths to Excellence and



Equity, Wednesday, January 27, 2010 Rayburn House Office Building, Washington, DC.

122. Invited Plenary Symposium, 2010 Meeting of the Society for Research on Educational Effectiveness, Washington, DC, March 4-5, 2010. Interaction of Research, Practice, and Policy in Mathematics Education. Also, Keynote presentation, Curriculum Research Framework—Beyond the Research-to-Practice Model.

123. NAEYC Annual Conference & Expo, Washington, DC, November 20, 2009. Report of the NRC Committee on Early Mathematics.

124. NAEYC's National Institute for Early Childhood Professional Development, Charlotte, NC, June 14-16, 2009. Playing with Math—Research on the Relationships between Play and the Learning and Teaching of Mathematics and Early childhood mathematics: Research findings and recommendations for practice and policy for the 2008 report of the National Research Council.

125. Annual Meeting of the National Council of Teachers of Mathematics, Washington, D.C., April 23-28, 2009. Two presentations: Mixing Assessment and Instruction: Getting Children to Think and Talk about Measurement Meaningfully and The National Research Council Report on Early Mathematics.

126. Annual Meeting of the National Council of Supervisors of Mathematics, Washington, D.C., April 22-24, 2009. The National Research Council Report on Early Mathematics.

127. Research Pre-session of 2009 National Council of Teachers of Mathematics, Washington, D.C., April 20-22, 2009. Two presentations: Scaling Up High-Quality Mathematics for All Children and Report of the NRC Committee on Early Childhood Mathematics.

128. The Annual Meeting of the American Educational Research Association, San Diego, CA, April 12-18. Three papers: Scaling Up Successful Interventions: Multidisciplinary Perspectives; Hypothetical Learning Trajectory for Length: A Multidisciplinary Study, and Children's Abstraction of Iterative Units to Measure Linear Space: A Learning Trajectory for Teaching Length.

129. The 2009 Annual Meeting of the National Association for Research in Science Teaching, Garden Grove, CA, April 17-21. Hypothetical Learning Trajectory for Measurement: A Multidisciplinary Study.

130. The Biennial Meeting of the Society for Research in Child Development, Denver, CO, April 1-4, 2009. Four papers: Evaluation of a Model for Scaling Up Interventions: Teaching Early Math for Understanding with Trajectories and Technologies; Foundational and Achievable Mathematics for Early Childhood Education; A PreK Mathematics Curriculum: Impacts on Early Literacy; Early Intervention Research and Children's School Readiness: What Role Does Curriculum Play?

131. Clements, D. H. (Author & Presenter), Sarama, J. A. (Author), SRCD Biennial Meeting, "Early Intervention Research and Children's School Readiness: What Role Does Curriculum Play?"
132. SREE — Society for Research on Educational Effectiveness Second Annual Conference, Experimental Evaluation of a Scale-up Model for Teaching Mathematics with Trajectories and Technologies, Washington, DC, February 2, 2009. (invited)
133. AMTE (Association of Mathematics Teacher Educators) Thirteenth Annual Conference, Orlando, FL, February 6, 2009. The NRC Committee Report on Early Mathematics.
134. NAEYC Annual Conference & Expo, Dallas, TX, November 7, 2008. Report of the NRC Committee on Early Mathematics.
135. Institute of Education Sciences Research Conference, Washington, DC, June 10-12, 2008. Scaling Up TRIAD: Teaching Early Mathematics for Understanding with Trajectories and The impact of an intensive PreK mathematics curriculum on emerging literacy and language skills.
136. NAEYC's National Institute for Early Childhood Professional Development, New Orleans, LA, June 8-10, 2008. A technology triad: scaling up with computers for teachers, children, and teacher trainers.
137. NAEYC's National Institute for Early Childhood Professional Development, New Orleans, LA, June 8-10, 2008. Giggles and gigabytes: can children's play thrive in a virtual world?
138. Research Pre-session of the 86th Annual Meeting of the National Council of Teachers of Mathematics, Salt Lake City, UT, March, 2007. Two presentations: Scaling Up TRIAD: Teaching Math with Trajectories and Technologies and Mathematics Specialists and Coaches: Research and Issues from the Field.
139. Four presentations, the 86th Annual Meeting of the National Council of Teachers of Mathematics, Salt Lake City, UT, March, 2007. Discussion of the National Math Panel Results (2 presentations), Making Research-based Innovations Work in Large Urban Settings: Lessons Learned, and Computers in Early Childhood: The Best of All Possible "Worlds"
140. The Annual Meeting of the American Educational Research Association, New York, March, 2007. Two presentations, discussant on a third: Scaling-Up Interventions: The Case of Mathematics, Mentoring and Coaching as Critical Components of Teacher Growth in Implementing and Preschool Mathematics Curriculum, Curious Minds: Bringing Early Reasoning Skills to the Fore. The TalentPower Program.
141. Keynote, Gateways Mathematics Conference (NSF Curriculum Development Projects), Phoenix, AZ, February 12, 2008. Curriculum development and research cycle.
142. NAEYC's Annual Conference, Chicago, IL, June 8, 2007. Evidence-based and intentional use of new technology in early learning.

143. NAEYC's National Institute for Early Childhood Professional Development, Pittsburgh, PA, June 11-12, 2007. NCTM's Curriculum Focal Points.
144. Institute of Education Sciences Research Conference, Washington, DC, June 6-8, 2007. Scaling Up TRIAD: Early Descriptive Data and Innovative Software for Professional Development and Experimental Evaluation of a Research-based PreK Math Curriculum.
145. The Annual Meeting of the American Educational Research Association, Chicago, IL, April, 2007. Three presentations: How Should Preschoolers Spend Their Day? Integration and Conflicts Across Developmental Areas: Objectives and Educational Importance; Development of a Measure of Early Mathematics Achievement Using the Rasch Model; and Research and NCTM's "Curriculum Focal Points".
146. Research Pre-session of the 85th Annual Meeting of the National Council of Teachers of Mathematics, Atlanta, GA, March, 2007. Research and the Curriculum Focal Points.
147. Five presentations, the 85th Annual Meeting of the National Council of Teachers of Mathematics, Atlanta, GA, March, 2007. Representing math ideas: Learning trajectories for young children and their teachers; NCTM's Curriculum Focal Points and Curricula in Early Childhood; Powerful representations of mathematics for early childhood; What's the point?; Curriculum Focal Points.
148. The Annual Meeting of the National Council of Supervisors of Mathematics, Atlanta, GA, March, 2007. NCTM's Curriculum Focal Points.
149. The Biennial Meeting of the Society for Research in Child Development, Boston, MA, March 2007. Four papers: Concreteness and Cognitive Development: New Perspectives on a Classic Developmental Issue; Development of a Measure of Early Mathematics Developmental Progressions Using the Rasch Model; Fostering Development Among Teachers and Children in Literacy, Math, Science and Social Development; and Effects of Early Childhood Interventions on Children's School Readiness: Findings from an Evaluation Study of Preschool Curricula.
150. Keynote, Waterford Research Institute, Best Practices Conference, Feb. 21, 2007. Best practices in mathematics education for young children.
151. The Annual Meeting of the National Association for the Education of Young Children (NAEYC), Atlanta, GA, Nov. 8-11, 2006. The Building Blocks mathematics project: Evaluating a research-based preschool mathematics curriculum in low- and mixed-income communities.
152. Keynote, PreK/K Leadership Institute, California Department of Education and the California Reading and Literature Project, in collaboration with the UCI/California Science and Math Projects, University of California, Irvine, CA. Nov. 4, 2006. Mathematics for young children.

153. Association of Mathematics Teachers of New York State 56th Annual Conference, Saratoga Springs, NY, October 26-28, 2006. Curriculum focal points in early mathematics - What is important for children of every age?
154. Keynote, Georgia State Math Conference, Rock Eagle, GA, October 19-21, 2006. Building Blocks of mathematics.
155. Keynote, NCTM Regional Conference (Association of Mathematics Teachers of New Jersey), Atlantic City, NJ, Oct. 19-20, 2006. New directions in early mathematics education.
156. Keynote, Second Biennial Children's Conference "Best Practices to Next Practices: Promoting the Well Being of Children and Families in Urban America" co-hosted by Wayne State University's Children's Bridge and Children's Hospital of Michigan. September 28-29, 2006. The building blocks of early mathematics.
157. NCTM Regional Conference, Atlantic City, NJ, October, 19, 2006. The building blocks of early mathematics education.
158. Presentation to President Bush's National Math Panel, Boston, MA. Curriculum Focal Points.
159. The Conference for the Advancement of Math Teaching Annual Conference, Houston, TX, July 19-July 20, 2006, The Building Blocks of Early Mathematics: Scaling Up Curriculum and Professional Development. George R. Brown Convention Center 1001 Avenidas de las Americas.
160. Institute of Education Sciences Research Conference, Washington, DC, June 14-16, 2006. Lessons learned from scale-up research. In addition, three poster sessions: (1) Scaling Up the Implementation of a Pre-Kindergarten Mathematics Curriculum: Teaching for Understanding with Trajectories and Technologies, (2) Curriculum Research: Toward a Framework for "Research-based Curricula," and (3) Scaling Up TRIAD: Teaching Early Mathematics for Understanding with Trajectories and Technologies.
161. NAEYC's National Institute for Early Childhood Professional Development, San Antonio, TX, June 5-7, 2006. NCTM's Curriculum Focal Points.
162. NAEYC's National Institute for Early Childhood Professional Development, San Antonio, TX, June 5-7, 2006. Focusing on outcomes: How do I teach math, literacy and social emotional all at the same time?
163. Research Pre-session of the 84th Annual Meeting of the National Council of Teachers of Mathematics, St. Louis, April, 2006. Randomized Trials in Mathematics Education Research (organizer and presenter).
164. The 84th Annual Meeting of the National Council of Teachers of Mathematics, St. Louis, April, 2006. Research-based technology: Software for early and primary education.
165. The 84th Annual Meeting of the National Council of Teachers of Mathematics, St. Louis, April, 2006. Prekindergarten math for disadvantaged children: Research on Building Blocks.

166. The Annual Meeting of the American Educational Research Association, San Francisco, CA, April, 2006. Discussant on: Supporting Developmental Progress from Birth to 12 Years: Standards-Based Observational Assessments Informing Practice in California.
167. The Annual Meeting of the American Educational Research Association, San Francisco, CA, April, 2006. Discussant on: New Perspectives on the Role of Concreteness in Cognitive Development and Early Education.
168. The Annual Meeting of the American Educational Research Association, San Francisco, CA, April, 2006. Preschool Curriculum Evaluation Research.
169. The Annual Meeting of the American Educational Research Association, San Francisco, CA, April, 2006. Experimental Evaluation of the Effects of Research-Based Preschool Mathematics Curricula.
170. The Annual Meeting of the American Educational Research Association, San Francisco, CA, April, 2006. Randomized Trials in Curriculum Research: The Case of Mathematics.
171. The Annual Meeting of the American Educational Research Association, San Francisco, CA, April, 2006. Scaling Up the Implementation of a Pre-Kindergarten Mathematics Curricula: A Program Evaluation.
172. Presentation at the Finding Common Ground in K12 Mathematics Education conference, Purdue University, Indianapolis, IN, March 2-5, 2006. Curriculum Focal Points: PreK-2.
173. Presentation at the National Science Foundation's Principal Investigators Meeting, Washington, DC, Feb. 27-28, 2006. Curriculum Research: A Framework for Research-based Curricula.
174. The Annual Meeting of the National Association for the Education of Young Children, Washington, DC, Dec. 6-10, 2005. Longitudinal study of Pre-K mathematics. Paper, component of the Preschool Curriculum Evaluation Research Project. With the entire national cohort group.
175. National Institutes of Health (National Cancer Institute): Numeracy and Health: Basic and Applied Perspectives, North Bethesda, MD, December, 2005, Numeracy and Beyond: Mathematical Foundations (invited).
176. National Math Symposium, Edutopia, Skywalker Ranch, CA, October 21 2005. Technology and Mathematics. (invited)
177. Scholastic Early Childhood Summit, New York, NY, October 7 2005. Literacy and Mathematics. (invited)
178. PBS Summer Institute, Washington, DC, Aug. 8-9, 2005. Keynote: Technology in Preschool — Past, Present, and Future. Second presentation: Technology and Mathematics.
179. NAEYC's National Institute for Early Childhood Professional Development, Miami Beach, FL, June 5-8, 2005. Closing the gap in early math: Research shows that curriculum matters.

180. NAEYC's National Institute for Early Childhood Professional Development, Miami Beach, FL, June 5-8, 2005. Title I/Math Collaboration—Breakout Session Title (with the U.S. Dept. of Education Office of Elementary and Secondary Education)
181. The Biennial Meeting of the Society for Research in Child Development, Atlanta, GA, April 2005. Symposium/paper: Curricula as Intervention: Preliminary Results from the Preschool Curriculum Evaluation Research (PCER) Program: National and Site Specific Data.
182. The Biennial Meeting of the Society for Research in Child Development, Atlanta, GA, April 2005. Symposium/paper: Curricula as Intervention: Results from Randomized Control Trials.
183. The Biennial Meeting of the Society for Research in Child Development, Atlanta, GA, April 2005. Electronic Poster: Effects of a Research-Based Preschool Mathematics Curriculum.
184. The Biennial Meeting of the Society for Research in Child Development, Atlanta, GA, April 2005. Poster: A hypothetical learning trajectory in practice: Young children's composition of geometric figures.
185. The Biennial Meeting of the Society for Research in Child Development, Atlanta, GA, April 2005. Symposium/discussant: Promoting Preschool Mathematical Development in Low Income Children
186. The Annual Meeting of the American Educational Research Association, Montreal, Canada, April, 2005. Mathematics knowledge of low-income entering preschoolers.
187. The Annual Meeting of the American Educational Research Association, Montreal, Canada, April, 2005. Longitudinal study of a preschool mathematics curriculum. A paper presented as part of a symposium, Preschool Curriculum Evaluation Research (PCER) 2002: Lessons learned from two years of curriculum implementation. Young Children and Creative Technologies.
188. The Annual Meeting of the American Educational Research Association, Montreal, Canada, April, 2005. Discussant at a symposium organized by X. Christine Wang, Young Children and Creative Technologies.
189. Research Pre-session of the 83rd Annual Meeting of the National Council of Teachers of Mathematics, Anaheim, CA, April, 2005. Closing the Gap: Interventions in Early Childhood Mathematics Education. With J. Sarama (organizers and presenters).
190. The 83rd Annual Meeting of the National Council of Teachers of Mathematics, Anaheim, CA, April, 2005. PreK Mathematics Across Diverse Settings—Issues of Scaling Up.
191. Presentation and Advisory Board Member, Title I Math Steering Committee, OESE: Mathematics and Science Partnerships, U. S. Department of Education, Washington, DC, December 10, 2004. Curriculum Research.

192. Presentation, Title I Mathematics Collaboration Steering Committee, U.S. Dept. of Education Office of Elementary and Secondary Education. "Early Mathematics Research," Washington, DC, Dec. 7, 2004.
193. Presentation, National Clearinghouse for Comprehensive School Reform Annual meeting on Comprehensive School Reform, Washington, DC, June 29, 2004. Curriculum Research in a CSR Context. (invited)
194. The Annual Meeting of the American Educational Research Association, San Diego, CA, April, 2004. Young children's composition of geometric figures: A learning trajectory. A paper presented as part of a symposium organized by Clements & Sarama, and chaired by Clements, The Use of Learning Trajectories in Research-based Mathematics Curriculum Development, Assessment, and Professional Development. With J. Sarama.
195. The Annual Meeting of the American Educational Research Association, San Diego, CA, April, 2004. Curriculum Research: Toward a Framework for "Research-based Curricula. With J. Sarama.
196. Keynote and Planning Committee, National Research Council's workshop on Mathematical and Scientific Development in Early Childhood, Washington, DC, March 22, 2004. Research in Early Childhood Mathematics. (invited)
197. The Annual Meeting of the National Association for the Education of Young Children, Chicago, IL, Nov. 5-9, 2003. Preschool Curriculum Evaluation Research Project. With the entire national cohort group.
198. The Annual Meeting of the National Association for the Education of Young Children, Chicago, IL, Nov. 5-9, 2003. Teaching the Young Thinker: Integrating Learning, Development, and High-Quality Practices in Mathematics. With J. Sarama, M. E. Bardsley, and J. Copley.
199. NAEYC's National Institute for Early Childhood Professional Development, Portland, OR, June 15-17, 2003. Integrating Knowledge of Learning and Teaching Mathematics, of Development, and of High-Quality Practice: Catalysts for Professional Development. With J. Copley.
200. The TEAM II annual meeting, Raleigh, NC, June 24. Geometry in early childhood education. (invited)
201. The Annual Meeting of the American Educational Research Association, New Chicago, IL, April, 2003. Effects of a Research-based Preschool Mathematics Curriculum: Summative Evaluation of the Building Blocks Project. With J. Sarama
202. Research Pre-session of the 81th Annual Meeting of the National Council of Teachers of Mathematics, San Antonio, April, 2003. Multiple Perspectives on an Early Childhood Mathematics Curriculum Research Project. With J. Sarama (organizers and presenters), and M. E. Bardsley, M. E. Spitler
203. The 81th Annual Meeting of the National Council of Teachers of Mathematics, San Antonio, April, 2003. Early Childhood Math: Promoting Good Beginnings—NCTM/NEAYC Joint Position. With C. Copple

204. The 81th Annual Meeting of the National Council of Teachers of Mathematics, San Antonio, April, 2003. Early Childhood Math: Teaching What Counts. [Invited by TEAM II]
205. National Academies, Boston, MA: April, 2003. Good beginnings in early mathematics: Linking a national vision to state action.
206. The Annual Meeting of the National Association for the Education of Young Children. November 20, New York, NY. Content standards for early childhood education--from ideas to implementation; also, The Building Blocks of early childhood math: Hands-on and computer activities (with J. Sarama & M. E. Bardsley); Content standards for early childhood education--from ideas to implementation; and Putting into practice the NAEYC/NCTM position on early childhood mathematics.
207. National Academies, Los Angeles, CA: November 14, 2002. Good beginnings in early mathematics: Linking a national vision to state action.
208. Proposed, co-chaired, and presented two papers at Good beginnings in early mathematics: Linking a national vision to state action, September 18, 2002. Funded by the Carnegie Corporation of New York.
209. DLM Summer Institute, Houston, TX, July 23-25, 2002. The Building Blocks of ECE Mathematics. With J. Sarama.
210. Institute for Early Childhood Mathematics, Rutgers University in New Brunswick, NJ, July 9-11, 2002. The Building Blocks of ECE Mathematics. With J. Sarama.
211. Head Start's 6th National Research Conference, Washington, D. C., June 19-22, 2002. Research on early childhood mathematics: Building Blocks.
212. NAEYC's National Institute for Early Childhood Professional Development, Albuquerque, NM, June 9-12, 2002. Promoting Good Beginnings in Early Childhood Mathematics: A joint position statement of the NAEYC and the National Council for Teachers of Mathematics (NCTM). With C. Copple and M. Hyson.
213. NAEYC's National Institute for Early Childhood Professional Development, Albuquerque, NM., June 9-12, 2002. The Building Blocks of Professional Development in ECE Mathematics. With J. Sarama.
214. Scholastic Early Childhood Advisory Board Annual Meeting, New York, NY, May 2002. Math for Young Minds. (invited)
215. Research Pre-session of the 80th Annual Meeting of the National Council of Teachers of Mathematics, Las Vega, NV, April, 2002. The Use of Learning Trajectories in Curriculum Development and Research. With J. Sarama (organizer and presenters)
216. Research Pre-session of the 80th Annual Meeting of the National Council of Teachers of Mathematics, Las Vega, NV, April, 2002. Mentoring session for new researchers.
217. The 80th Annual Meeting of the National Council of Teachers of Mathematics, Las Vega, NV, April, 2002. Building Blocks: Play, Manipulatives, and Computers for PreK-2 Mathematics. With J. Sarama.



218. The Annual Meeting of the American Educational Research Association, New Orleans, LA, April, 2002. Geometric composition and decomposition in the early years. With J. Sarama and D. Wilson.
219. The Annual Meeting of the American Educational Research Association, New Orleans, LA, April, 2002. Evaluation and comparison of four geometric turn interfaces. With J. Sarama.
220. Keynote address: The National Association of Early Childhood Teacher Educators, pre-conference session of the Annual Meeting of the National Association for the Education of Young Children. October 31, 2001, Anaheim, CA. Teaching What Counts: Math and Computers in Early Childhood Teacher Education. With J. Sarama (invited)
221. The Annual Meeting of the National Association for the Education of Young Children. November 3, 2001, Anaheim, CA. NAEYC and NCTM on best practices in mathematics with young children. With C. Copple
222. The Annual Meeting of the National Association for the Education of Young Children. November 2, Anaheim, CA. What Should Early Childhood Mathematics Be? Findings from a National Conference. With Carol Copple
223. The Annual Meeting of the National Association for the Education of Young Children. November 1-3 (repeated 3 times), Anaheim, CA. Building Blocks and Math Makers software. With J. Sarama
224. Main presenter, California Prekindergarten Learning and Development Guidelines. September 29, 2001. Cincinnati, OH (note: broadcast throughout the state of California). Video broadcast: Mathematics.
225. SDE's National Kindergarten Conference, Orlando, FL, July 14-18, 2001. Four presentations (3 workshops, one repeated): NCTM Standards- The Kindergarten Connection (July 16); Teaching What Counts: Math in Kindergarten (July 16); and Computing in Kindergarten (July 17, presented twice). (invited)
226. Keynote address, Electronic Education National Conference. Math and Technology in ECE. West Palm Beach, FL, July 18, 2001. (invited)
227. NAEYC's National Institute for Early Childhood Professional Development, Washington, D. C., June 10-13, 2001. Engaging young children in mathematics: The Conference on Standards for Preschool and Kindergarten Mathematics Education. With J. Sarama.
228. NAEYC's National Institute for Early Childhood Professional Development, Washington, D. C., June 10-13, 2001. An Investigation into Professional Development in Early Childhood Mathematics. With J. Sarama & Mary Elaine Spitzer
229. NAEYC's National Institute for Early Childhood Professional Development, Washington, D. C., June 10-13, 2001. Standards for early childhood professional development. Panel member. (invited)

230. The Annual Meeting of the American Educational Research Association, Seattle, WA, April, 2001. Computers in early childhood mathematics. With J. Sarama.
231. Research Presession of the 79th Annual Meeting of the National Council of Teachers of Mathematics, Orlando, FL, April 2-4, 2001. Research-based Standards for PreK-2 Mathematics: Findings from a National Conference. (Organizer and presenter.) With J. Sarama.
232. Research Presession of the 79th Annual Meeting of the National Council of Teachers of Mathematics, Orlando, FL, April 2-4, 2001. What are some of the ways in which technology affects learning in the area of early and middle school geometry? (Organizer and presenter.) With J. Sarama.
233. The 79th Annual Meeting of the National Council of Teachers of Mathematics, Orlando, FL, April, 2001. Linking research and the early childhood mathematics standards of Principles and Standards for School Mathematics. With A. DiBiase and J. Sarama.
234. The 79th Annual Meeting of the National Council of Teachers of Mathematics, Orlando, FL, April, 2001. Principles and Standards for Prekindergarten through Grade 2 and Building Blocks: Activities that Meet the Goals. With J. Sarama.
235. The 79th Annual Meeting of the National Council of Teachers of Mathematics, Orlando, FL, April, 2001. A Closer Look at Principles and Standards: Ideas into Action. Pre-K-2. With four colleagues. (invited)
236. Keynote address: The National Head Start Child Development Institute. December 5-6, 2000, Washington, DC. Mathematics for the youngest child: Big ideas for little children. (invited keynote address to 5,000 participants)
237. The Annual Meeting of the National Association for the Education of Young Children. November 8, 2000, Atlanta, GA. Technology and young children, research and best practices using the tools of technology to benefit children from birth through age 8.
238. The Annual Meeting of the National Association for the Education of Young Children. November 8, 2000, Atlanta, GA. The New Preschool to Grade 2 Math Standards and Building Blocks—Activities that Meet the Goals. With Julie Sarama
239. The Annual Meeting of the National Association for the Education of Young Children. November 8, 2000, Atlanta, GA. Planning for Professional Development in Pre-School Mathematics: Meeting the Challenge of the New Math Standards for a Diverse Population. With Julie Sarama
240. ExxonMobil Annual Conference, Falls Church VA, September, 2000. Conference on Early Childhood Mathematics Standards. With Julie Sarama and Ann-Marie DiBiase (invited)
241. The Ninth Annual Conference of the National Association for the Education of Young Children's National Institute for Early Childhood Professional Development. June 4-7, 2000, San Francisco, CA.

- Professional Development in Early Childhood Mathematics: Meeting the Challenge of Standards 2000. With Julie Sarama and Mary Elaine Spitler
242. Conference on Standards for Preschool and Kindergarten Mathematics Education, Arlington, VA, May 2000. Geometric and spatial thinking in early childhood education.
243. Scholastic Early Childhood Advisory Board Annual Meeting, New York, NY, May 2000. Math, technology, and early childhood education. (invited)
244. The Annual Meeting of the American Educational Research Association, New Orleans, LA, April, April, 2000. Composition of geometric figures by young children. With J. Sarama and L. Rothenberg.
245. The Annual Meeting of the Association for Childhood Education International, April, 2000. Principles and Standards for School Mathematics – What this means for PreK-2 students and teachers. With F. Fennell. (invited)
246. The 78th Annual Meeting of the National Council of Teachers of Mathematics, San Francisco, CA, April, 2000. Linking research and the new early childhood mathematics standards. With J. Sarama, organizer and presenter.
247. The 78th Annual Meeting of the National Council of Teachers of Mathematics, San Francisco, CA, April, 2000. Measurement in school mathematics: Ideas exchange for the 2002 yearbook.
248. Research Pre-session: The 78th Annual Meeting of the National Council of Teachers of Mathematics, San Francisco, CA, April, 2000. Geometric and spatial thinking in early childhood education.
249. The Annual Meeting of the National Association for the Education of Young Children. November 13, 1999, New Orleans, LA. Mathematics Before Kindergarten? The Preschool Section of the National Council of Teachers of Mathematics' Standards 2000 Project
250. Educating for the future: Connecting kindergarten in the Year 2000 to the workforce of 2020, New York, NY, June 1999. How can we help all children develop a broad range of skills that will prepare them for later competency and success in S/M/T? (invited)
251. Scholastic Early Childhood Advisory Board Annual Meeting, New York, NY, May 1999. Computers and early childhood. (invited)
252. Research Pre-session, Annual Meeting of the National Council of Teachers of Mathematics, San Francisco, CA, April, 1999. New ways to share mathematics education research.
253. The 77th Annual Meeting of the National Council of Teachers of Mathematics, San Francisco, CA, April, 1999. Computers in early childhood.
254. The 77th Annual Meeting of the National Council of Teachers of Mathematics, San Francisco, CA, April, 1999. Using Turtle Math throughout elementary school mathematics.

255. Clements, D. H. (1998, November). Early childhood mathematics. Paper presented at the National Conference on Science, Mathematics, and Technology Education. Baltimore, MD: The Park School.
256. The Annual Meeting of the National Association for the Education of Young Children (NAEYC), Toronto, ON, Canada, Nov., 1998. NAEYC's position on technology—what does research say? With J. Sarama.
257. Keynote address: The 45th Annual Meeting of the Conference for the Advancements of Mathematics Teaching, San Antonio, TX, July 23, 1998. Teaching what counts. (invited)
258. The Annual Meeting of the American Educational Research Association, San Diego, CA, April, 1998. Students' development of concepts of two-dimensional space. With J. Sarama.
259. The Annual Meeting of the American Educational Research Association, San Diego, CA, April, 1998. Evaluation of an educational environment designed on research-based principles. With J. Sarama.
260. Mathematical Cognition: From Numerical thinking to mathematics education, Conference sponsored by National Institute of Child Health and Human Development (NICHD), April, 1998. Early mathematical competencies. With J. Sarama. (invited)
261. Research Pre-session, Annual Meeting of the National Council of Teachers of Mathematics, Washington, DC, March 1998. Constructivist software: developing computer environments based on theoretical models.
262. The 76th Annual Meeting of the National Council of Teachers of Mathematics, Washington, DC, April, 1998. Research-based constructivist software environments. With J. Sarama.
263. Clements, D. H. (1998, February). Young children and technology. Paper presented at the Forum on Early Childhood Science, Mathematics, and Technology Education, Washington, DC. (ERIC Document Reproduction Service No. ED 416 991)
264. NSF-sponsored Working Conference on Classroom Assessment in Mathematics, Raleigh, NC, May 1997. Computers in mathematics education assessment (invited)
265. Research Pre-session, Annual Meeting of the National Council of Teachers of Mathematics, Minneapolis, MN, April 1997. Spatial sense and mathematics: Issues and questions for research and coherent curriculum development.
266. The 75th Annual Meeting of the National Council of Teachers of Mathematics, Minneapolis, MN, April, 1997. The use of a computer manipulative in elementary mathematics. With J. Sarama.
267. The 75th Annual Meeting of the National Council of Teachers of Mathematics, Minneapolis, MN, April, 1997. Meeting the technological challenge: Transforming early and primary math with computers. With J. Sarama.

268. The 75th Annual Meeting of the National Council of Teachers of Mathematics, Minneapolis, MN, April, 1997. An update on the Standards: What about technology? We need your input! (invited)
269. The Annual Meeting of the Association for Childhood Education International, Portland, OR, April, 1997. Patterns of collaborative meaning-making during peer interactions. With S. Swaminathan, B. Nastasi.
270. The Annual Meeting of the American Educational Research Association, Chicago, IL, March, 1997. Young children's concepts of shape. With M. A. Z. Hannibal, S. Swaminathan, J. Sarama, D. Schrier.
271. The Annual Meeting of the American Educational Research Association, Chicago, IL, March, 1997. The effects of Shapes, a computer manipulative, on children's psychological/mathematical processes. With Sarama and E. B. Vukelic.
272. The Annual Meeting of the American Educational Research Association, Chicago, IL, March, 1997. Effectiveness of a synthesized curriculum on kindergarten children's geometric thinking. With S. Swaminathan, D. Schrier.
273. The Eighteenth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Panama City, FL, October 1996. Development of students' spatial thinking in a curriculum unit on geometric motions and area. With J. Sarama, M. Battista.
274. The Eighteenth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Panama City, FL, October 1996. The role of a computer manipulative in fostering specific psychological/mathematical processes. With J. Sarama, E. Vukelic.
275. The Eighteenth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Panama City, FL, October 1996. Representing, connecting and restructuring knowledge: a micro-genetic analysis of a child's learning in an open-ended task involving perimeter, paths and polygons. With J. Barrett.
276. The Eighteenth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Panama City, FL, October 1996. Development of turn and turn measurement concepts in a computer-based instructional unit. With J. Sarama, M. Battista, S. Swaminathan.
277. The Eighteenth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Panama City, FL, October 1996. Multidisciplinary research perspectives on an implementation of a computer-based mathematics innovation. With J. Sarama, J. Henry, S. Swaminathan.
278. NCTM Research Pre-session, Annual Meeting of the National Council of Teachers of Mathematics, San Diego, April 1996. A year in the

- life of Turtle Math: Multiple perspectives on an implementation of a mathematics innovation. With J. Sarama, J. Henry, S. Swaminathan, E. Vukelic, L. Steffe
279. The Annual Meeting of the National Council of Supervisors of Mathematics, San Diego, April 1996. Rethinking “Concrete” Manipulatives. (invited)
280. The Annual Meeting of the American Educational Research Association, New York City, April 1996. Second grade student's spatial structuring of 2D rectangular arrays. With M. T. Battista
281. The Annual Meeting of the American Educational Research Association, New York City, April 1996. Development of concepts of geometric figures in a specially-designed Logo computer environment. With J. Sarama and M. T. Battista
282. The Annual Meeting of the American Educational Research Association, New York City, April 1996. Development of students' spatial thinking in a curriculum unit on geometric motions and area. With J. Sarama and M. T. Battista
283. The Annual Meeting of the American Educational Research Association, New York City, April 1996. Computers and creativity, symposium
284. The Annual Meeting of the American Educational Research Association, New York City, April 1996. Cognitive dissonances in peer interactions. With Sudha Swaminathan and B. Nastasi
285. Annual International Study Conference of the Association for Childhood, Education International, Minneapolis, MN, April, 1996. With Sudha Swaminathan Bonnie K. Nastasi. Variations within cognitive conflicts and their impact on learning.
286. National Educational Computing Conference. Baltimore, MD, June 1995. Technology in the "Investigations in Number, Data, and Space" project. With J. Sarama.
287. National Educational Computing Conference. Baltimore, MD, June 1995. Asserting the role of programming in the intellectual and creative development of students. With J. Sarama.
288. National Educational Computing Conference. Baltimore, MD, June 1995. Logosium: Logo research, Past, present future. With J. Sarama.
289. National Educational Computing Conference. Baltimore, MD, June 1995. Workshop: Integrating Software from Investigations in Number, Data and Space Project. With J. Sarama.
290. National Educational Computing Conference. Baltimore, MD, June 1995. Workshop: Turtle Math: A Computer Environment and Activities for Elementary Mathematics. With J. Sarama.
291. PME-NA, Columbus, OH, October 1995. Enumerating cubes in 3d arrays: Intermediate Students' strategies and Instructional progress. With M. T. Battista

292. The Annual Meeting of the American Educational Research Association, San Francisco, April 1995. Turn concepts in a computer-based instructional unit. With J. Sarama and M. T. Battista
293. The Annual Meeting of the American Educational Research Association, San Francisco, April 1995. Students' understanding of three-dimensional rectangular arrays of cubes. With M. T. Battista
294. The Annual Meeting of the American Educational Research Association, San Francisco, April 1995. Network of Influences in an Implementation of a Mathematics Curriculum Innovation. With J. Sarama and J. Henry
295. The Annual Meeting of the American Educational Research Association, San Francisco, April 1995. Discussant: The appropriateness of developmentally appropriate practice: A debate and discussion AND identifying highly accomplished early education teachers: The National Teacher Certification approach.
296. The Annual Meeting of the American Educational Research Association, San Francisco, April 1995. Genesis of cognitive dissonance in peer interactions. With S. Swaminathan B. Nastasi. (invited)
297. The 73rd Annual Meeting of the National Council of Teachers of Mathematics. Boston, MA, April, 1995. Unique contributions of computers to learning and teaching geometry: Multiple perspectives. With J. Sarama, M. T. Battista. (refereed; Clements organized, proposed, and presented at this symposium)
298. The 73rd Annual Meeting of the National Council of Teachers of Mathematics. Boston, MA, April, 1995. Students' development of length concepts in a computer-based Investigations unit. With J. Sarama, M. T. Battista.
299. The 73rd Annual Meeting of the National Council of Teachers of Mathematics. Boston, MA, April, 1995. Enumerating cubes in 3d arrays: Intermediate students' strategies and instructional progress. With M. T. Battista.
300. The 73rd Annual Meeting of the National Council of Teachers of Mathematics, CLIME presentation. Boston, MA, April, 1995. Innovative Logo environments. With J. Sarama. (invited)
301. International Group for the Psychology in Mathematics Education—North American Chapter, Baton Rouge, LA, November 5-8, 1994. Students' development of length measurement concepts using a specially-designed turtle graphics environment. With M. Battista, J. Sarama.
302. International Group for the Psychology in Mathematics Education—North American Chapter, Baton Rouge, LA, November 5-8, 1994. Turtle Math: A Logo environment grounded in research. With J. Sarama (Sarama was first author and presenter).
303. International Group for the Psychology in Mathematics Education—North American Chapter, Baton Rouge, LA, November 5-8,

1994. Computers environments for spatial-numerical concepts. With J. Sarama, M. Battista.
304. ACEI Study Conference. Washington, DC, April 12-15, 1995. No more worksheets: Ideas for teaching geometry in the early childhood classroom. With D. Schrier, Sudha Swaminathan, M. T. Battista.
305. National Educational Computing Conference. Boston, MA, June 1994. Logosium: Logo Research: Thresholds.
306. National Educational Computing Conference. Boston, MA, June 1994. A computer environment for elementary geometry and spatial sense. With J. S. Meredith, M. T. Battista.
307. National Educational Computing Conference. Boston, MA, June 1994. Turtle Math: A version of Logo and activities for elementary mathematics. With J. S. Meredith.
308. The 72nd Annual Meeting of the National Council of Teachers of Mathematics, CLIME presentation. Indianapolis, IN, April 14, 1994. A new software environment for geometry, grades 3-6. (invited)
309. The 72nd Annual Meeting of the National Council of Teachers of Mathematics. Indianapolis, IN, April 14, 1994. Computers at the crossroads: Linking technology, research, and the standards (invited)
310. The Annual Meeting of the American Educational Research Association, New Orleans, April 1994. Students' development of length measurement concepts using a specially-designed turtle graphics environment.
311. Geometry Center Software Conference, Minneapolis, MN July 15 - July 18, 1993. Design of a Logo Environment for Elementary Geometry. With J. S. Meredith (invited)
312. Geometry Center Software Conference, Minneapolis, MN July 15 - July 18, 1993. Students' development of length and turn measurement concepts in a computer-based unit on geometric paths. With J. S. Meredith (invited)
313. The Annual Meeting of the American Educational Research Association, Atlanta, GA, April 1993. Study of social processes in cooperative learning environments: The qualitative-quantitative mix. With B. K. Nastasi and A. Bingham
314. The Annual Meeting of the American Educational Research Association, Geometry Working Group, Atlanta, GA, April 1993. Students' construction of length and angle measure. (invited)
315. The 71st Annual Meeting of the National Council of Teachers of Mathematics, Seattle, WA, March, 1993. Geometry from the Handbook for Research. (invited)
316. The 71st Annual Meeting of the National Council of Teachers of Mathematics, Seattle, WA, March, 1993. Geometry: A new approach. (invited)
317. The 71st Annual Meeting of the National Council of Teachers of Mathematics, NCTM RAC/AERA SIG Research Presession, Seattle, WA,



- March, 1993. Discussant: Developing a constructivist learning environment in high school geometry. (invited)
318. The Annual Meeting of the American Educational Research Association, San Francisco, CA, April 1992. Motivation and perceived competence in two computer environments. With B. K. Nastasi
319. The Annual Meeting of the American Educational Research Association, San Francisco, CA, April 1992. Social processes as mediators of higher-order thinking. With B. K. Nastasi
320. The Annual Meeting of the National Council of Teachers of Mathematics, Nashville, TN, March, 1992. Logo Geometry in the primary grade classroom. with M. Battista
321. The Annual Meeting of the National Council of Supervisors of Mathematics, Nashville, TN, March, 1992. Integrating computers in the elementary mathematics classroom. (invited)
322. Presenter and participant, In search of future microworlds: An invitational meeting on microcomputer applications in the early childhood environment, August 1-2, 1991. Children and computers: Whirlwind research tour. (invited)
323. The Annual Meeting of the National Council of Teachers of Mathematics, New Orleans, LA, April 1991. Evaluation of a Logo-based elementary geometry curriculum from the perspective of the Standards. with M. Battista
324. The Annual Meeting of the National Council of Teachers of Mathematics, NCTM RAC/AERA SIG Research Presession, New Orleans, LA, April 1991. Contributions of new technologies to research.
325. The Annual Meeting of the American Educational Research Association, Chicago, IL, April 1991. Designing and studying technology-rich learning environments: Examples from uses of Hypercard. Discussant
326. The Annual Meeting of the American Educational Research Association, Chicago, IL, April 1991. Students' conceptualizations of geometric motions in computer and noncomputer environments. With M. Battista, K. Gentile
327. National Educational Computing Conference. Nashville, TN, June 1990. Logo Geometry. With M. Battista.
328. The Annual Meeting of the American Educational Research Association, Boston, MA, April 1990. Logo environments and learning of geometry. With M. Battista
329. The Annual Meeting of the National Council of Teachers of Mathematics, NCTM RAC/AERA SIG Research Presession, Salt Lake City, Utah, April 1990. Computer environments for learning geometry.
330. The Annual Meeting of the National Council of Teachers of Mathematics, Salt Lake City, Utah, April 1990. Logo environments and geometric learning.
331. The Annual Meeting of the National Council of Teachers of Mathematics, Salt Lake City, Utah, April 1990. Getting a research paper published: Suggestions from the JRME editorial board.

332. National Educational Computing Conference. Boston, MA, June 1989. A Logo-based elementary school geometry curriculum. With M. Battista.
333. The Annual Meeting of the National Council of Teachers of Mathematics, Orlando, FL, April 1989. Logo and Geometry Project: Geometric thinking in the early grades. With M. Battista.
334. The Annual Meeting of the American Educational Research Association, San Francisco, CA, April 1989. Social and cognitive conflict indifferent computer environments. With B. Nastasi
335. The Ninety-Sixth Annual Convention of the American Psychological Association, Atlanta, GA, August 1988. Measurement of metacomponential functioning via observation and dynamic assessment. With B. Nastasi.
336. Chair, The Annual Meeting of the American Educational Research Association, New Orleans, LA, April 1988. Problems and prospects of children's home educational microcomputing: The second New York area study of families.
337. The Annual Meeting of the American Educational Research Association, New Orleans, LA, April 1988. Effects of Logo programming on third graders' development of geometric concepts. With M. Battista.
338. The Annual Meeting of the National Council of Teachers of Mathematics, Chicago, IL, April 1988. Getting a research paper published: Suggestions from the JRME editorial board.
339. The Annual Meeting of the National Council of Teachers of Mathematics, Chicago, IL, April 1988. Learning of geometry through Logo: Three perspectives. With M. Battista.
340. Annual meeting of the Association of State Supervisors of Mathematics, NSF Logo and Geometry Project, Chicago, IL, April 1988. With M. T. Battista. (invited)
341. National Association for the Education of Young Children Annual Conference, Chicago, November 1987. Social interaction within computer environments: Implications for social-emotional and cognitive development with B. K. Nastasi.
342. Learning and Teaching Geometry: Issues for Research and Practice working conference, Syracuse, NY: Syracuse University, June, 1987. Logo-based Geometry: Rationale and Curriculum. With M. T. Battista. (invited)
343. National Educational Computing Conference, Philadelphia, PA, June 1987. NSF Elementary math materials grants: Logo and geometry project. With M. T. Battista.
344. Chair and Speaker, National Educational Computing Conference, Philadelphia, PA, June 1987. Symposium: Perspectives on Logo teacher training.
345. The Biennial Meeting of the Society for Research in Child Development, Baltimore, MD, April 1987. Symposium: Acquisition and transfer of Logo programming skills (D. Klahr, Chair). Paper:

Componential employments and development in Logo programming environments.

346. The Annual Meeting of the American Educational Research Association, Washington, DC, April 1987. Symposium, Research on Teaching and Learning Computer Programming, organized by Richard Mayer. Paper: Componential development in Logo programming environments.

347. The Annual Meeting of the American Educational Research Association, Washington, DC, April 1987. The effects of Logo on mathematical conceptualizations and problem-solving abilities. With M. Battista.

348. The Annual Meeting of the American Educational Research Association, Washington, DC, April 1987. Logo, teaching strategies, and computer effects on metacognition. With S. B. Silvern, M. K. Lang, J. C. McCary.

349. The Annual Meeting of the American Educational Research Association, Washington, DC, April 1987. Effects of Logo programming and CAI problem solving on social and social-cognitive behaviors.

350. The Annual Meeting of the National Council of Teachers of Mathematics, Washington, D.C., April 1986. Geometry: The evolving role of the computer and Logo. (invited)

351. National Association for the Education of Young Children Annual Conference, New Orleans, November 1986. Promising uses of computers with younger children: Beginning writing and programming with J. L. Hoot.

352. Logo 86 Conference, MIT, Cambridge, MA, July 1986. Logo and social-emotional development.

353. Plenary Session Speaker, Logo 86 Conference, MIT, Cambridge, MA, July 1986. Logo and Cognition.

354. Logo 86 Conference, MIT, Cambridge, MA, July 1986. Logo lives on after 18 months: A follow-up study.

355. Logo 86 Conference, MIT, Cambridge, MA, July 1986. A theoretical framework for the development of metacognitive abilities in Logo environments.

356. The National Educational Computing Conference, San Diego, CA, June, 1986. Logo and social development research: What next?

357. The Annual Meeting of the American Educational Research Association, San Francisco, CA, April 1986. A comparative study of “all-day,” “alternate-day,” and “half-day” kindergarten schedules: Effects on achievement and classroom social behaviors. With D. F. Gullo, C. U. Bersani, K. M. Bayless.

358. The Annual Meeting of the American Educational Research Association, San Francisco, April 1986. Learning and teaching Logo: An information-processing perspective.

359. The Annual Meeting of the American Educational Research Association, San Francisco, April 1986. Delayed effects of Logo programming on mathematics achievement.
360. The Annual Meeting of the American Educational Research Association, San Francisco, April 1986. Problem-solving processes of elementary students in Logo and CAI problem-solving environments. With M. T. Battista.
361. The Annual Meeting of the American Educational Research Association, San Francisco, April 1986. Metacognitive interactions in Logo programming and computer-assisted instruction environments. With B. K. Nastasi.
362. Discussant, The Annual Meeting of the American Educational Research Association, San Francisco, April 1986. Symposium: Education microcomputing at home: How goes "the revolution."
363. The Annual Meeting of the National Council of Teachers of Mathematics, Washington, D.C., April 1986. Computer programming and problem solving. (invited)
364. The Annual Meeting of the National Council of Teachers of Mathematics, Washington, D.C., April 1986. Longitudinal study of the effects of Logo programming on cognitive abilities and mathematical knowledge.
365. National Association for the Education of Young Children Annual Conference, New Orleans, November 1985. Joining the computer age: What should young children and teachers do with computers?
366. Logo 85 Conference, MIT, Cambridge, MA, July 1985. Empirical evaluation of Logo in early and elementary education: Research review and implications.
367. The Annual Meeting of the American Educational Research Association, Chicago, April 1985. Effects of logo programming on cognition, metacognition, and achievement.
368. The Annual Meeting of the American Educational Research Association, Chicago, April 1985. Effects of Logo programming and computer-assisted instruction on social behaviors and use of heuristics.
369. The Biennial Meeting of the Society for Research in Child Development, Toronto, Ontario, April 1985. Differential effects of computer programming (Logo) and computer assisted instruction on young children's executive processes and cognitive development.
370. The Annual Meeting of the American Educational Research Association, Chicago, April 1985. Implications of media research for the instructional application of computers with young children.
371. Association for Educational Data Systems/Educational Computing Organization of Ontario, April 1985. Social effects of two computer environments on primary grade children.
372. Annual Meeting of the National Association of School Psychologists, Las Vegas, April 1985. A multifaceted approach to the assessment of social competence. With B. K. Nastasi.

373. Logo 84, MIT, Cambridge, MA, June 1984. Social and cognitive effects of Logo programming: A developmental study.
374. Second National Conference by the Program in Early Childhood Education, Teachers College, Columbia University, June 1984. Research review: Young children and computers. With P. Hooper. (invited)
375. The Annual Meeting of the National Council of Teachers of Mathematics, San Francisco, CA, April 1984. Computers in early childhood: Logo and child-centered programs. (invited)
376. The Annual Meeting of the National Council of Teachers of Mathematics, San Francisco, April 1984. Computer programming vs. CAI--Effects on cognitive development and academic achievement.
377. The Annual Meeting of the American Educational Research Association, New Orleans, April 1984. Effects of varying kindergarten schedules on achievement, classroom behavior, and attendance.
378. The Annual Meeting of the American Educational Research Association, New Orleans, April 1984. With D. F. Gullo: Pretraining knowledge and learning: What is the relationship?
379. The Annual Meeting of the American Educational Research Association, New Orleans, April 1984. Effects of computer programming vs. computer assisted instruction on the cognitive style and cognitive development of young children.
380. First National Conference by the Program in Early Childhood Education: Microcomputers, Electronic Toys and Genius Machines in Early Childhood Education, Teachers College, Columbia University, June/July 1983. Computer readiness activities for young children. Applications of microcomputers and electronic learning aids in diverse educational settings. (invited)
381. The Annual Meeting of the Research Council for Diagnostic and Prescriptive Mathematics, Bowling Green, Ohio, April 1983. An early childhood curriculum based on recent theory and research on counting.
382. The Annual Meeting of the National Council of Teachers of Mathematics, Chicago, IL, April 1983. The effects of a logical foundation vs. a number skills curriculum on young children's learning.
383. The Biennial Meeting of the Society for Research in Child Development, Chicago, IL, April 1983. The generalization and transfer of operations and number skills.

Presentations/Conferences: State and Regional

1. Regional Meeting of the National Council of Teachers of Mathematics (NCTM), Indianapolis IN, March 16-18, 2022. LT-Squared—Learning and Teaching with Learning Trajectories Tool: Support for Professional Learning.
2. Regional Meeting of the National Council of Teachers of Mathematics (NCTM), New Orleans, LA, February 2-4, 2022. LT-Squared—Learning and Teaching with Learning Trajectories Tool: Support for Professional Learning.

3. Presentation, 2021 WSA Winter Meeting 2021 / Reunión Invernal de la Asociación WS, Region 9 Head Start Association, Bellevue, WA, February 25, 2021. The Surprising Importance of Early Math.
4. Presentation, 2019 Early Childhood STEM Institute, Region 9 Head Start Association, Pasadena, CA, February 23-26, 2021. Supporting professional learning communities in early math: Learning and teaching with learning trajectories.
5. Presentation, Curriculum and Instruction Steering Committee Symposium, Monterey, CA, February 20, 2020. The Importance of Interdisciplinary Approaches for Early Childhood Programs.
6. Invited presentation, Los Angeles County Office (DOE), Los Angeles, CA, November 2, 2019, Interdisciplinary teaching across multiple domains: Efficacy of the C4L (Connect4Learning) Curriculum.
7. Two presentations, NCTM Regional Conference, Salt Lake City, UT, October 17-19, 2019. Teaching Geometry to Young Children: Parts and Properties and Differentiate Powerfully and Joyfully—the Learning and Teaching with Learning Trajectories Tool.
8. NCTM Regional Conference, Boston, MA, September 24-26, 2019. LT-Squared—Learning and Teaching with Learning Trajectories Tool: Support for Professional Learning.
9. Two presentations and one informal chat, Symposium on Early Childhood Mathematics Development: Professional Development, Portland, OR, July 29-30, 2019. Making More of Math: Math + Self Regulation.
10. Three presentations, 2019 Early Childhood STEM Institute, Region 9 Head Start Association, Pasadena, CA, March 25-27, 2019. Self-paced learning about children’s math thinking, with playful activities: The Learning and Teaching with Learning Trajectories Tool, Teaching Geometry to Young Children: From Whole Shapes to Parts and Properties, and Social-emotional Development STEAMs Ahead.
11. Keynote and presentation, Indiana Early Childhood Conference, Indianapolis, IN, March 14-15, 2019. The Surprising Importance of Early Math (Keynote) and STEAM Ahead with Interdisciplinary Learning and Teaching.
12. Keynote, School Readiness Symposium, Ready at Five, Ellicott City, MD, December 5, 2018. Interdisciplinary Education for the Youngest Learners.
13. Two presentations, NCTM Regional Conference, Seattle, WA, November 29-30. Teaching Geometry to Young Children: Parts and Properties and LT-Squared: Learning and Teaching with Learning Trajectories Tool: Support for Professional Learning.
14. Two presentations, one featured, NCTM Regional Conference, Kansas City, MO, November 1-3. Teaching Geometry to Young Children: Parts and Properties and LT-Squared: Learning and Teaching with Learning Trajectories Tool: Support for Professional Learning.

15. Three-hour keynote. Orange County Department of Education Annual Meeting, Orange County, CA, Oct. 11-12, 2018. The Interdisciplinary Approach to Pre-K: Connect4Learning.(invited)
16. Five presentations, , Kansas MTSS (Multi-Tier System of Supports) Symposium, Wichita, KS, September 5-6, 2018. The Building Blocks of Early Math (repeated), The Learning and Teaching with Technology Tool [LT]2 (repeated); The Surprising Importance of Early Mathematics: Curriculum and Teaching. (invited)
17. Two-day workshop, Coach Institute, City of Phoenix Human Services Department Education Division, Phoenix, AZ, May 22-23, 2018. Coaching early mathematics.
18. Full-day workshop, Early Math Professional Learning Network, Puget Sound ESD, Renton, WA, May 17, 2018. Patterning and Pre-algebra.
19. Full-day workshop, Early Math Professional Learning Network, Puget Sound ESD, Renton, WA, March 13, 2018. Learning and teaching with learning trajectories.
20. Full-day workshop, Arizona Department of Education, Phoenix, AZ, February 15, 2018. The Building Blocks of Early Mathematics: Learning Trajectories for Young Children.
21. Presentation, Western States Leadership Conference, Tempe, AZ, February 12-16, 2018. Creating a Responsive Environment.
22. Keynote, 2018 RTI/MTSS Effective Instruction Conference, Anchorage, Alaska. January 26-28, 2018. Elevating Effective Instruction.
23. Keynote presentation, Kansas MTSS (Multi-Tier System of Supports) Symposium, Wichita, KS. The Surprising Importance of Early Mathematics: Curriculum and Teaching. (invited)
24. ECEA, Early Childhood Education Association of Colorado annual conference, Denver, CO, September 22, 2017. The Surprising Importance of Early Math.
25. Keynote, 9th Annual Kentucky Center for Mathematics (KCM) conference, Lexington, Kentucky, March 6 & 7, 2017. The Importance of Early Mathematics.
26. Keynote, Illinois Council of Teachers of Mathematics (ICTM) Conference, Peoria, IL, October 7, 2016. The Early Years Lay the Foundations for Success.
27. Keynote, TSR (Texas School Ready) Summer Institute, Austin, TX, July 6, 2016, The Surprising Importance in Early Math.
28. The Learning and Teaching with Learning Trajectories tool. Presentation and workshop, Tukwila, WA, Tukwila School District #406, May 10, 2016.
29. Keynote and breakout session, 2016 Iowa Association for the Education of Young Children Spring Leadership Institute, Des Moines, Iowa, May 7, 2016. The Surprising Importance of Early Math and The Building Blocks of Early Math.

30. Keynote, Ohio AEYC (Association for the Education of Young Children), Sandusky Ohio, April 21-23, 2016. The Building Blocks of Early Math. (invited)
31. Keynote, Rocky Mountain Early Childhood Conference (RMECC), Denver, CO, February 20, 2016. The Building Blocks of Early Math. (invited)
32. Keynote, North Carolina Council of Teachers of Mathematics (NCCTM) Conference, Greensboro NC, Nov. 5-6, 2015. The Surprising Importance of Early Math.
33. Keynote. Illinois Council of Teachers of Mathematics, Peoria IL, Oct. 22-24. Early and Later Math. (invited)
34. Keynote presentation, Four Corners Early Childhood Education Conference, Farmington, NM, September 11-12, 2015. The Surprising Importance of Early Math.
35. Award acceptance speech, NYS Association of Mathematics Supervisors, Albany, NY, September 25, 2015. The Surprising Importance of Early Math.
36. Keynote presentation, Governor's Institute, Wilkes-Barre, PA, July 28, 2015. Early Math: Policies and Practice.
37. Keynote presentation, Governor's Institute, Monroeville, PA, June 23, 2015. Early Math: Policies and Practice.
38. Keynote presentation, STEM Leadership Symposium, Santé Fe, NM, June 7-10, 2015. The Building Blocks of Early Math.
39. Keynote presentation, Seattle, WA, May 19-20, 2015. Washington State's OSPI Expert Mathematics Panel. The Building Blocks of Early Mathematics. (invited)
40. Keynote presentation, Wichita, KS, September 4, 2014. Kansas Multi-Tier System of Supports Symposium, Center for Technical Assistance for Excellence in Special Education (TAESE). The Building Blocks of Early Mathematics. (invited)
41. Presentation, CASE (Colorado Association for School Executives), Breckenridge, CO, July 23, 2014. Meeting the Developmental and Academic Needs of Young Learners: Can It Be Done?
42. Early Childhood Stem Conference, Costa Mesa, CA, February 6-8, 2014. The Building Blocks of Early Mathematics and participation on the opening panel. (invited)
43. Keynote. Kentucky Council of Teachers of Mathematics, Louisville, KY, November 7, 2013. Lessons from Research: Standards, Teaching, Learning Trajectories (invited)
44. Keynote and 2nd talk. North Carolina Council of Teachers of Mathematics, Greensboro, North Carolina, November 1, 2013. Keynote: The Building Blocks of Early Mathematics. Presentation: Teaching Math to Young Children: The Paths of Early Mathematics (invited)
45. Keynote, Kindergarten Conference, Boston, MA. Sept. 4, 2013. TRIAD Scale Up and the Building Blocks of Early Mathematics.



46. Jennings and Rebecca Jones Foundation, Murfreesboro, TN. June 4-5, 2013. Critical Thinking with the Common Core: K-2.
47. Keynote, Early Childhood Distinguished Lecture Series, National Center on Quality Teaching and Learning, University of Washington, May 9, 2013. The Building Blocks of Early Mathematics.
48. National Council of Teachers of Mathematics, Dallas, TX, October 11-12, 2012. Math Lessons from Research (invited)
49. Conference for the Advancements of Mathematics Teaching, CAMT 2012, Houston, TX, July 17-18, 2012. Learning Trajectories: The Core of Standards, Teaching, and Learning. (invited)
50. Pennsylvania Council of Teachers of Mathematics, November 10-11, 2011. Presentation: Math Lessons from Research (invited)
51. Pennsylvania Council of Leaders of Mathematics, November 9, 2011. Presentation: Learning Trajectories: The Core of Standards, Teaching, and Learning (invited)
52. Colorado Council of Teachers of Mathematics, Denver, CO, October 27-28, 2011. Two presentations: Math Lessons from Research; The Building Blocks of Early Mathematics (invited)
53. Early Childhood Education Institute Annual Conference, University of Oklahoma-Tulsa, OK, September 15-17, 2011. Early mathematics. Three keynote presentations and two breakout sessions.
54. Conference for the Advancements of Mathematics Teaching, CAMT 2011, Dallas, TX, July 20, 2011. Learning Trajectories? The Core of Standards, Teaching, and Learning. (invited)
55. Presentations, NCTM Regional Conference, Green Lake, Wisconsin, May 6, 2011. The Building Blocks of Mathematics: Research to Practice.
56. Presentations, NCTM Regional Conference, Denver, CO, October 7, 2010. The Building Blocks of Early Math and Important Learning Trajectories and Activities.
57. Keynote, UMLN 2010, The Urban Mathematics Leadership Network, Atlanta, GA. June 1, 2010. Common Core Mathematics for Early Childhood (invited).
58. Keynote, Association of Mathematics Teachers of New York State, Buffalo, NY. November 12, 2009. The National Math Advisory Panel: Building Blocks of Mathematics (invited).
59. Presentation, University of Virginia's Curry School of Education's 2009-2010 Education Research Lectureship Series, Charlottesville, VA, November 6, 2009. The Building Blocks of Early Math.
60. Keynote, NCTM Regional Conference, Nashville, TN, November 19, 2009. The Building Blocks of Early Math
61. Presentation, NCTM Regional Conference, Pittsburgh, PA, November 5, 2009. The Building Blocks of Early Math.
62. Presentation, The 50th Annual Georgia Mathematic Conference, October 15-17, 2009. The Building Blocks of Early Mathematics.

63. Keynote address, Brenau University, Gainesville, Julie 16-17, 2009. Constructivism in Early Mathematics Education; also, Issues in Early Childhood: A Debate.
64. Keynote address, Waterford Early Learning Institute, Waterford Institute, Salt Lake City, UT, April 1, 2009. Lessons from Research— Mathematics Education.
65. Presentation, Association of Mathematics Teachers of New Jersey's Conference, "Special Education/Mathematics - Preparing for State Standards and Assessments," December 3, 2008. Research on Mathematics Education for Students with Special Needs.
66. Two presentations, North Carolina Teachers of Mathematics Conference, Greensboro, NC, October 30, 2008. Two sessions: The Building Blocks of Math and Interactive Panel: Engaging in and Reasoning about Important Mathematics.
67. Presentation, NCTM Regional Conference, Cleveland, OH, October 26, 2008. The National Math Panel.
68. Conference for the Advancements of Mathematics Teaching, CAMT 2008: Steering Mathematics Towards Excellence, Dallas, TX, July 9, 2008. Teaching math: 7 successful strategies. (invited)
69. Presentation Association of Math Teachers of New Jersey, Newark, NJ, October 26, 2007. The Building Blocks of Math.
70. Presentation, Western New York Regional Mathematics Conference, Clarence, NY, October 20, 2007. Curriculum Focal Points and Research.
71. The Annual Meeting of the North Carolina Council of Teachers of Mathematics, Greensboro, NC, October, 2007. Three presentations: Real Math; the Building Blocks of Math, and Number Worlds and Building Blocks. (invited)
72. The Conference for the Advancement of Math Teaching Annual Conference, San Antonio, TX, June 28-30, 2007, Standards, NCTM's Curriculum Focal Points, and the Building Blocks of Math, and Software for Learning Mathematics: The Best of all Possible Worlds.
73. Presentation, NYS Association for the Education of Young Children, Westchester, NY, May 4, 2007. The Building Blocks of Early Mathematics and The Building Blocks mathematics project: Evaluating a research-based preschool mathematics curriculum in low- and mixed-income communities.
74. Presentation, New Hampshire Teachers of Mathematics 44th Annual Spring Conference in Concord, NH, March 12, 2007. Number sense.
75. Presentation, Mathematics and Science Partnerships Program Regional Conference, Dallas, TX, Feb. 7, 2007. The Curriculum Focal Points.
76. Presentation, Mathematics and Science Partnerships Program Regional Conference, Seattle, WA, January 10, 2007. The Building Blocks of Early Mathematics Education.

77. Presentation, Mathematics and Science Partnerships Program Regional Conference, Phoenix, Arizona, January 8-9, 2007. NCTM's Curriculum Focal Points.
78. Presentation, Association of Mathematics Teachers of New Jersey, Jamesburg, NJ, December 14, 2006. Pedagogical Strategies that Promote Equity in Mathematics.
79. Presentation, National Council of Teachers of Mathematics, Northeast Regional Conference Hartford, CN, October 6, 2005. Early Childhood Mathematics: Play, Assessment, and Instruction.
80. Keynote, Sumner County Schools, Gallatin, TN, June 30, 2005. Two presentations: Mathematics in Grades 3-5 and Mathematics in PreK to Grade 2: What research says.
81. Keynote, Early Childhood Learning Community/Arizona State University, Phoenix, AZ, May 7, 2005. Research in Early Mathematics.
82. Keynote, the California Math Summit, Santa Monica, CA, January 15, 2005. Mathematics Research Implications.
83. Presentation, National Council of Teachers of Mathematics, Southeast Regional Conference New Orleans, November 3-6, 2004. Early Childhood Mathematics.
84. Keynote for the Ontario Dept. of Education, Toronto, ON, Canada, October 30, 2004. Geometry.
85. Keynote, the Pennsylvania Council of Teachers of Mathematics, Erie Math in Erie Conference, October 28, 2004. Early Childhood Mathematics: The Research.
86. Keynote, Association of Mathematics Teachers of New Jersey, Somerset, NY, October 15, 2004. Lessons from Research. (invited)
87. One of two main presenters, SUNY Training Strategies, Math: What's Play Got to Do with It?, a videoconference delivered by satellite to 5,000 child care providers at sites throughout NYS, June 24, 2004, 7 p.m. to 9 p.m.
88. Southern California Association for the Education of Young Children. Math for Early Childhood Educators. Los Angeles, CA, May 2-3, 2004.
89. Standards Committee, New York State Education Dept. Research on Early Childhood Mathematics, Albany, NY, March 17, 2004.
90. Keynote, The 2nd Annual Keefe-Bruyette Symposium on Early Learning. Mathematical Thinking in Young Children, Hartford, CT, March 15, 2004. (invited)
91. Keynote, Texas Association of Administrators and Supervisors of Programs for Young Children. Building Blocks of Early Childhood Mathematics, Austin, TX, Feb. 27, 2004. (invited)
92. One keynote and two additional presentations, Louisiana Association for the Education of Young Children. Teaching What Counts: Math, Alexandria, LA, Oct. 17-18, 2003. (invited)
93. Two presentations, AISD Summit. Teaching What Counts: Math (repeated), Alief, TX, July 26, 2001. (invited)

94. Two presentations, DLM Summer Institute. The DLM Express Math Lessons and Technology in the Early Years, Dallas, TX, July 23, 2003. With J. Sarama (invited)
95. Keynote Speaker, Conference for the Advancement of Mathematics Teaching, July 17, 2003. Houston, TX. Teaching what counts: Mathematics and computers in early childhood.
96. Early Childhood Leadership Institute, Washington, DC, June 27-28, 2003. The Building Blocks of Early Childhood Math. With J. Sarama, M. E. Bardsley, and R. O'Dell
97. Keynote speaker, one additional presentation, Rhode Island College, Providence, RI, June 12, 2003. Applying Research and NCTM Standards to Teaching Kindergarten Math and Teaching What Counts: Math and Computers in Early Childhood (invited)
98. Keynote speaker, Math Leadership Academy - Promoting Math Innovations that "Leave No Child Behind," Orlando, FL, June 6, 2003. "Math Lessons" from Research. (invited)
99. Keynote speakers, Creating & Maintaining High Quality Preschools: Implementing the Early Childhood Expectations in Abbott Preschools, Union, NJ, May 30, 2003. The Building Blocks of Early Childhood Math. With J. Sarama (invited)
100. Connecticut State Dept. of Education Conference on Early Mathematics, Hartford, CT, May 19, 2003. DLM Math. With J. Sarama (invited)
101. Keynote speaker, 6th Annual Early Years Conference. Math and Technology in Preschool. San Diego, CA, February 4, 2003.
102. Waterford Early Childhood Education Conference, Salt Lake City, NV, November 12, 2002. Teaching What Counts: Early Childhood Mathematics. (invited)
103. Pennsylvania Council of Teachers of Mathematics, Scranton, PA, October 24, 2002. Teaching What Counts. (invited)
104. Keynote presentation, "Defining quality in early mathematics education," regional conference at Rutgers University, supported by the Carnegie Corp. Building Blocks: Research-based early childhood mathematics curricula. New Brunswick, NJ, July 10-11, 2002. With J. Sarama (invited)
105. Keynote presentation, California Department of Education, March 19, 2002. Prekindergarten Learning and Development Guidelines: Mathematics (Session 3). Videoconference received by over 200 sites throughout the state of California. (invited)
106. Presentation, National Council of Teachers of Mathematics Professional Development Institute, NCTM Academy for Professional Development. Computers Support Algebraic Thinking, August 2, 2001. (invited)
107. Two presentations, DLM Summer Institute. Teaching What Counts: Math and Technology in the Early Years, July 26, 2001. (invited)

108. Keynote and one additional presentation, NYU-Corning Head Start Conference. Plenary: Teaching What Counts. Follow-up presentation: Math and Technology in the Early Years. Geneva, NY, June 15, 2001. With J. Sarama (invited)
109. Keynote and two additional presentations, Spring New England Head Start Conference. Plenary: Teaching What Counts. Follow-up presentations: Math and Technology in the Early Years and Math Concepts Throughout the Day. North Conway N.H., May 3, 2001. (invited)
110. Keynote presentation, California Department of Education, May 1, 2001. Prekindergarten Learning and Development Guidelines: Mathematics (Session 3). Videoconference received by over 200 sites throughout the state of California. (invited)
111. Keynote address, the 57th Early Childhood Conference, Kent State University, Kent, OH, October 28, 2000. Math and Technology in Early Childhood Education. (invited)
112. Western New York Association for the Education of Young Children (AEYC) Annual Conference, Buffalo, NY, October 12, 2000. Math and Technology in Early Childhood Education. With Julie Sarama.
113. Third Annual New York State Kindergarten Convention. July 14, 2000, Saratoga Spring. Computing in kindergarten. (invited)
114. Third Annual New York State Kindergarten Convention. July 14, 2000, Saratoga Spring. Teaching what counts: Math in kindergarten. (invited)
115. Diagnostic and Prescriptive Mathematics Association annual conference. November 3, 1999, Hershey, PA. Teaching what counts: Standards of excellence. (invited)
116. Indiana Council of Teachers of Mathematics Annual Conference. November 1 1999, Richmond, VA. Teaching What Counts. (invited)
117. Indiana Council of Teachers of Mathematics Annual Conference. October 31, 1999, Richmond, VA. Building Blocks—Foundations for Mathematical Thinking, PreKindergarten to Grade 2. (invited)
118. SERVE (SouthEastern Regional Vision for Education, Eisenhower Consortium for Mathematics and Science Education) Forum. October 25 - 27, 1999, in Atlanta, GA. A dialogue on young children and technology (invited)
119. National Council of Teachers of Mathematics Annual Eastern Regional Conference. October 13, 1999, Pittsburgh, PA. Computers in early childhood mathematics education.
120. Missouri Association for Supervision and Curriculum Development annual meeting, St. Louis, MI. January 25, 1998. Mathematics Curricula. (invited)
121. Virginia Council of Teachers of Mathematics annual meeting. November 22, 1997, Richmond, VA. Teaching What Counts. (invited)
122. Louisiana. Council of Teachers of Mathematics annual meeting. November 8, 1997, LA. Innovative mathematics curricula. (invited)

123. Keynote address: Mathematics Mentors Project, Albany, NY. September 18, 1997. Technology and the NYS Standards (Invited).
124. Constructivist Teaching Conference, Hoover, AL, June 20, 1996. Keynote address: From exercises and tasks to problems and projects: Constructivist teaching with technology; also, session: "Computers in early childhood and elementary education (Invited)
125. CompuQuest Leadership Program, Chicago, IL. May 4, 1996. Computers in education: Facing the challenge? (Invited)
126. Leadership Program in Discrete Mathematics. March 9-10, 1996. Where is the Discrete Mathematics in turtle Logo? (Invited)
127. Second Annual New York Graduate Mathematics Education Research Conference. 6/15/21. Four presentations: Students' development of geometric concepts in a specially-designed computer environment; Technology in mathematics education in elementary school; Visions for technology in mathematics education; and Redesigning Logo: Turtle Math as a new elementary mathematics environment. With Julie Sarama. (invited)
128. Illinois Council of Teachers of Mathematics 47th annual meeting and pre-conference. October 12, 1995. Turtle Math: A computer environment and activities for elementary mathematics. With Julie Sarama. (invited)
129. Illinois Council of Teachers of Mathematics 47th annual meeting and pre-conference. October 12, 1995. From exercises and tasks to problems and projects. (invited)
130. Orleans Niagara Teacher Support Group, Chautauqua, NY. May 6, 1995. Evolutions and Revolutions in Elementary School Mathematics. (invited)
131. Association of Mathematics Teachers of New York State, Buffalo, NY. November 13, 1993. Geo-Logo: Geometry Investigations. With Julie Sarama and Sue McMillen.
132. Seventh Annual 1993 New Jersey Educational Computing Conference, Montclair State College, Montclair, New Jersey, March 25-26, 1992. Four presentations or panels: Investigations in Number, Data, and Space, Geo-Logo: A research-based Logo for elementary geometry (with Julie Sarama Meredith), Tumbling Tetrominoes (with Julie S. Meredith), and a panel, Technology as a subversive activity. (invited)
133. Sixth Annual 1992 New Jersey Educational Computing Conference, Raritan Valley Community College, Somerville, New Jersey, March 12-13, 1992. Logo Geometry™: Constructing geometric ideas.
134. Southeastern Regional Conference of the National Council of Teachers of Mathematics, Baltimore, MD. October, 1991. Using an integrated set of software in primary school mathematics. (invited)
135. Stevens Computer Integration in Pre-College Mathematics Conferences, Stevens Institute of Technology Center of Improved Engineering and Science Education, Hoboken, NJ, April, 1991. Reform in mathematics education: Vistas and Paths.

136. WNY Regional Mathematics Consortium, South Buffalo, NY, October 14, 2003. Teaching That Counts: Mathematics in the Early Years. With Julie Sarama (invited)
137. Second Annual NY/NJ Logo Conference, Montclair, New Jersey, March 16, 1991. Logo Geometry™ Workshop.
138. Fifth Annual 1991 New Jersey Educational Computing Conference, Raritan Valley Community College, Somerville, New Jersey, March 13-15, 1991. Two presentations: Logo Geometry: Results from the classroom and Social interactions in computer environments that lead to higher-order thinking.
139. Fourth Annual 1990 New Jersey Educational Computing Conference, Raritan Valley Community College, Somerville, New Jersey, March 15-17, 1990. Five presentations: A Logo-based elementary school geometry curriculum: Curriculum and research, Computers in elementary mathematics education, Computers in early childhood education: Research and practice, developing higher-order thinking skills in Logo programming environments, and Logo-based Elementary School Geometry Curriculum workshop.
140. NCTM Standards Conferences (NSF-sponsored), University of New Hampshire, Durham, NH, Nov. 2, 1989; Plymouth State College, Plymouth, NH, Nov. 3, 1989; Keene State College, Keene, NH, Nov. 4, 1989. The NCTM Standards, K-4.
141. Illinois School Psychologists Association, Peoria, IL. March 1989. Children's social and social-cognitive interactions in educational computer environments. With B. Nastasi. (refereed)
142. North Central Regional Conference of the National Council of Teachers of Mathematics, Grand Rapids, Michigan. March 1989. Logo-based geometry project. With M. Battista. (refereed)
143. Northeastern Regional Conference of the National Council of Teachers of Mathematics, Boston, MA, November 1988. A Logo-based elementary geometry curriculum. With M. Battista. (refereed)
144. Great Lakes/East Coast Logo Conference, Cleveland, OH, May 1988. NSF Logo & Geometry. With M. T. Battista and others.
145. New York State Council for Children 40th Annual conference, New York, April 1988. Young children and computers: Research reports. (invited)
146. Ohio Council of Teachers of Mathematics, Youngstown, OH, March 1988. Teach geometry with Logo: An NSF project. With M. T. Battista.
147. Midwestern Society for Research on Life-Span Development, Akron, OH, May 1986. A teacher rating scale of early childhood social competence: Validation study. With B. K. Nastasi.
148. Educational Computer Consortium of Ohio, May 1986. Detective Selective and other homunculi: Teaching metacognitive skills with Logo.
149. Computation: Past, Present, and Future, Kentucky Council of Teachers of Mathematics, October 1985. First topic: Computers in

mathematics: A vista of educational evolution. Second topic: Logo: Programming, problem solving, and prolepsis. (Invited)

150. Integrating Computers into the Curriculum, Educational Computer Consortium of Ohio, October 1985. Improving problem Solving skills with the computer: preliminary results from a research study.

151. Perspective on the Young Child and the Computer, University of Texas at Austin, Austin, TX, September 1985. Conference summation-with-commentary. Also panel discussion: Sticky Issues. (Invited)

152. Conference Presentation, Ohio Association for the Education of Young Children Annual Conference, Cleveland OH, May 1985. Effects of kindergarten schedule on academic achievement and classroom social behavior. With Bayless, Bersani, and Gullo.

153. Educational Computer Consortium of Ohio, Integrating computers into the Curriculum, March 1985. Logo, problem solving, and mathematics.

154. Educational Computer Consortium of Ohio, Fourth Annual Educational Computer Fair: Educational Computing: The Second Stage, Cleveland, OH, October 1984. First topic: Research report--The effect of Logo vs. CAI training on the cognitive development, academic achievement, and metacognition of young children. Second topic: Logo list processing.

155. Eastern Educational Research Association Sixth Annual Conference, Baltimore, Maryland, February 1983. The effects of two training sequences on the development of counting strategies and logical operations.

156. Early Childhood Education Council of New York Fall Conference, Buffalo, New York, October, 1982. First topic: Computers and young children? Yes! Second topic: Early learning: An activity-centered approach.

157. New York State Migrant Child Care Conference, Utica, New York, June 1982. Caregivers of 4- and 5-Year-Olds: Caring about learning.

158. Early Childhood Education Council of New York, May 1981. Topic: Integrating reading, language arts, math, science, and social studies in early childhood.

#### Presentations/Conferences: Local

1. Keynote, TSR Early Childhood Summer Institute, Children's Learning Institute, Austin TX, July 6, 2016. The Surprising Importance of Early Math.

2. Keynote, Brookhill Institute Annual Conference, Brookhill Institute of Mathematics, Waukesha WI, April 25, 2016. The Surprising Importance of Early Math.

3. Keynote and Breakout Presentations, Tulsa Public Schools, Tulsa, OK, Oct. 15, 2015. The Building Blocks of Math.

4. Presentation, Pioneer Symposium, Denver, CO, Sept. 25, 2015. The Surprising Importance of Early Math.



5. Presentation, El Centro Central Schools, El Centro, CA, February 19, 2015. The Building Blocks of Math.
6. Presentation, Denver Metro District Board of the CAEYC, Denver, CO, February 22, 2014. The Building Blocks of Math.
7. Two presentations, Marsico Institute for Early Learning and Literacy Community Lecture Series, Oct 22-23, 2013. Current State of Early Childhood Mathematics Education; Myths and Misconceptions in Early Mathematics.
8. Three presentations, Center for Science, Mathematics, and Computer Education and College of Education and Human Sciences, University of Nebraska-Lincoln, Oct 7-8, 2013. Current State of the Field of Early Childhood Mathematics Education; Lessons from Research: The Building Blocks of Math; and Building Blocks and Other Math Curricula Preschool to Primary Grades.
9. Workshop, Denver Public Schools Preschool Program, Denver, CO. May 17, 2013. Math in pre-K and kindergarten.
10. Presentation, The University of Chicago Workshop on Education Lecture Series, Feb 12, 2013. Chicago, IL. Math and Research.
11. Keynote address, The 7th Annual Richard Andrews Lecture, The University of Missouri, March 16, 2011, Columbia, Missouri. Standards, Curriculum, and Research.
12. Keynote address, The Inaugural Hunter Institute on Young Children Conference, The College at Brockport, September 27, 2008, Brockport, NY. How young children learn: Encouraging early childhood math.
13. Presentation, Center for Cognitive Science, Buffalo, NY, April 23, 2008. The TRIAD Project.
14. Talk, Diocese of Buffalo, May 2, 2007, Buffalo, NY. Curriculum and standards in mathematics education.
15. Keynote address, Annual Graduate Conference in Education at Brock University, May 6, 2006, St. Catharine, Ontario, Canada. Conflicts and Resolutions in Research-based Curricula: Past Disappointments and Future Hopes?
16. Graduate School of Education's Continuing Professional Education Breakfast Lecture Series (K-12). Thursday, October 20, 2005, Buffalo, NY. Scaling up successful educational interventions.
17. Presentation for the Williamsville Central Schools. Geometry, transformations, and spatial sense in early childhood. Williamsville, NY, Wednesday, August 31, 2005.
18. Presentation for University of Buffalo's University and the World Lecture Series. Early Mathematics Learning and Teaching. Clemens Hall, UB, Buffalo, NY, June 17, 2004. With J. Sarama.
19. Presentation to the Western New York Regional Meeting of the New York State Prekindergarten Administrators. Building Blocks. Buffalo, NY, June 3, 2003.

20. Presentation to parents, Newfane Early Childhood Center. Math, Your Young Child, and You. Newfane, NY, March 19, 2003.
21. Presentation to all area Head Start Teachers, Head Start Center. Mathematics in Head Start. Rochester, NY, March 14, 2003.
22. Clarence Middle School, Clarence, NY, February 7, 2001. The New Mathematics Standards. (invited)
23. Guest/Discussant, AM Buffalo, WKBW TV, Buffalo, NY, January 22, 2001. "The New New Mathematics." (invited)
24. Williamsville Central Schools, Transit Middle School, Williamsville, NY, January 22, 2001. Learning What Counts in Mathematics. (invited)
25. Buffalo Public Schools, Early Childhood Program, West Hertel Academy, Buffalo, NY, November 15, 2000. Math and Technology in Early Childhood Education. (invited)
26. Summer Institute on Education, Graduate School of Education, University at Buffalo, State University of New York, July 10-14, 2000. Principles and Standards for School Mathematics: The National Council of Teachers of Mathematics' New Standards 2000 Project.
27. Center for Continuing Professional Education breakfast seminar. October 21, 1999, Buffalo, NY. Using math to teach technology at the early grades.
28. Elma School District, March 11, 1999. Presentation: What's important to teach.
29. Amherst Central School District, Feb., 12, 1999. Presentation: Number Sense.
30. Macmillan/McGraw-Hill, New York City, May 1, 1997. Presentation: Teaching what counts.
31. University Iowa, November 11 1995. Presentation: Educational innovation with mathematics software.
32. Center for Education Resources and Technologies, Weekly Seminar Series, October 29, 1996. Presentation: Teaching a class cooperatively at five universities: Internet video conferencing and World Wide Web communication.
33. West Seneca Central Schools, West Seneca, NY, January 17, 1996, January 24, 1996. Workshops: Educational change with Turtle Math. With J. Sarama.
34. University Iowa, November 11 1995. Presentation: Educational innovation with mathematics software.
35. University North Carolina, Asheville, North Carolina, June 24-30 1995. Workshop: Educational innovation with Turtle Math and other mathematics software. With J. Sarama.
36. Speaker, Williamsville Central School's Authors' Day, January 31, 1995. Publishing curriculum and software. (Invited)
37. Speaker, Western New York Preschool PTA, Wed., February 17, 1993. Computers in preschool education: research and practice. (Invited)

38. Speaker, Tallmadge Public Schools, Tallmadge, OH, August, 1992. Teaching mathematics with computers and manipulatives. (Invited)
39. Speaker, The Orleans-Niagara Teacher Center colloquium series, March, 1991. Whole language: Implications for the teaching and learning of “whole” mathematics. (Invited)
40. Speaker, National Science Foundation conference, “Algorithmic Approaches to Geometry Instruction,” Washington, DC, August 3, 1990. Research on computers and geometric thinking: Implications for algorithmic approaches. (Invited)
41. Speaker, The Orleans-Niagara Teacher Center colloquium series, February 21, 1990. The roots of whole language: Vygotskian theory. (Invited)
42. Speaker, The George Washington University, Colloquium lecture, November 15, 1989. The development of higher levels of geometric thinking. (Invited)
43. The Six District Educational Compact Mathematics NEOTA Professional Day Mathematics Institute, Tallmadge, Ohio, October 12-13, 1989. The NCTM Standards and early childhood mathematics education.
44. Speaker, Long Island University, August 7, 1989. Recent research on computers and young children (Invited)
45. Speaker, Tallmadge, OH, August 8, 1989. The psychology of learning mathematics in early childhood education.
46. Keynote address, Computing Educators League. Orchard Park, April 8, 1989. Elementary geometry.
47. Fall Chautauqua County Association for the Education of Young Children, SUNY at Fredonia, October 3, 1988. Mathematical thinking with manipulatives.
48. The Four Year Olds Come to School, Buffalo: SUNYAB/BOCES, July 8 and July 13, 1988. Number learning and four year olds.
49. Forty-third Early Childhood Education Conference, Kent State University, Kent, Ohio, November 1986. Thinking about thinking: Computers in early childhood.
50. NEOTA Professional Day, Stow, Ohio, October 1986. First topic: Logo for Elementary Teachers. Second topic: Elementary Mathematics Research Says....
51. Long Island University, July 1986. Computers and young children: New frontiers. (Invited)
52. Ohio State University, Instructional Design Department, February 1986. Research on Logo: A line of inquiry. (Invited)
53. Kenston Local School District, February 1986. Science software. (Invited)
54. Forty-second Early Childhood Education Conference, Kent State University, Kent, Ohio, November 1985. Predicting young children's achievement from ratings of social competence. With B. Nastasi.

55. Forty-second Early Childhood Education Conference, Kent State University, Kent, Ohio, November 1985. Young children and computers: What have we learned from research?
56. Long Island University, June 1985. Wishes, lies, dreams, and realities: Computers and young children. (Invited)
57. University of Wisconsin, Madison, February 1985. Computers in early and primary education. (Invited)
58. Forty-first Early Childhood Education Conference, Kent State University, Kent, Ohio, October 1984. Research on computers in early childhood education.
59. University at Buffalo, State University of New York, Buffalo, New York, April, 1984. Research on technology and young children.
60. NEOTA Professional Day, Kent, Ohio, October 1983. Using turtle geometry in early childhood classrooms.
61. Fortieth Early Childhood Education Conference, Kent State University, Kent, Ohio, October 1983. Computers in the early childhood classroom.
62. NEOTA Professional Day, Kent Roosevelt High School, Kent, Ohio, October 1983. Using turtle geometry with primary grade children.
63. Child Development Center Seminar, Kent, Ohio, September 1983. Computers and the young child.
64. KSU Computerama, February 1983. Logo in the classroom.
65. Thirty-Ninth Early Childhood Education Conference, Kent State University, Kent, Ohio, September 1982. Computers in the classroom: Helping the child cope in the microcomputer world.

#### Awards

1. Promoted to Distinguished University Professor, University of Denver, 6/2018.
2. National Science Foundation Facilitator's Choice award for video on the DU/ISU NSF-funded "Children's Measurement" project (<http://stemforall2016.videohall.com/presentations#/winners/id=winners>).
3. 2015 Innovator Award to Dr. Douglas H. Clements and Dr. Julie Sarama, given by Kaplan Early Learning Company, 11/19/2015.
4. Inducted into NYS Association of Mathematics Supervisors' Hall of Fame. Awarded on September, 26, 2015.
5. Selected for the National Academies of Sciences' Institute of Medicine / National Research Council Committee on Science of Children Birth to Age 8: Deepening and Broadening the Foundation for Success, November 1, 2013. <http://www.iom.edu/activities/children/birthtoeight.aspx>.
6. Selected for the National Academies of Sciences / National Research Council Committee on Early Mathematics
7. Distinguished Alumni Award, Graduate School of Education, University at Buffalo, May 10, 2012.
8. EISS Educator of the Year Award 2009, the California-based organization, Early Intervention for School Success, June 15, 2009.

9. Promoted to the rank of SUNY Distinguished Professor, March 2008.
10. Selected for the National Academies of Sciences' National Research Council Committee on the Science of Children Birth to Age 8, March 1, 2007
11. Chancellor's Award for Excellence in Scholarship and Creative Activities, State University of New York, 2006.
12. Dean's Apple Award for Outstanding Service to the Graduate School of Education, 2002-2003, University at Buffalo, State University of New York, May 2003.
13. Sustained Achievement Award, University at Buffalo, State University of New York, May 2002.
14. Technology & Learning Software of the Year award, 1995, in the category "Math," for Turtle Math, an educational software program designed, developed, and programmed by Douglas H. Clements & Julie Sarama.
15. Best research proposals submitted in research and creative activity appointments (of those evaluated over a decade), Kent State University Research Council, awarded March 1991.
16. Outstanding Alumni Award, Department of Learning and Instruction, University at Buffalo, State University of New York, June 1988.

## UNIVERSITY TEACHING AND SERVICE

### Teaching

New York City Department of Education

25 Professional Development Self-paced videos on early math. Re-designed for self-paced study with interwoven presentation, activities, and self-assessments, these 25 videos and accompanying resources and materials develop teachers' knowledge of learning trajectories for major topics in early mathematics.

National Center on Early Childhood, Teaching, Learning, and Development and Regional Educational Laboratory: Central

In our various projects, especially this REL, Dr. Sarama and I have created and conducted five professional-level webinars, three "15-minutes Suites" and extensive one e-learning module.

Institut für Erziehungs- und Bildungswissenschaft der Karl-Franzens-Universität Graz, Graz, Austria

Presented a course, March 2020, The Surprising Importance of Early Mathematics and Children's mathematical thinking, birth to third grade: Using the Learning and Teaching with Learning Trajectories tool.

Other

Several of the Presentations above, such as that for the, Curriculum and Instruction Steering Committee Symposium, Fresno, CA, June 26, 2020, attended by 7,300 participants, represent substantial outreach and teaching.

University of Denver

At DU, my teaching for several years has been non-traditional, including guest lectures in others' classes (one this year) and ongoing teaching and mentoring of our cross-departmental Graduate Research Assistants, in both research methodologies and implementation (e.g., assessment administration and scoring, research design and methods, data entry and cleaning, and statistical analyses) and in early childhood education (mostly math and STEM).

CUI 4503: "Elementary Math Methods for Cultural Linguistic Diversity" - 2294

CUI 4155: "Theory/Research in Early Math"

Taught multiple sessions for various methods courses on early mathematics.

University at Buffalo, State University of New York

Graduate courses taught include

LAI 527: "Learning Mathematics: Early Childhood"  
LAI 529: "Computers in Early and Primary Education"  
LAI 570: "Standards and Curriculum"  
LAI 575: "Computers in Elementary Mathematics Education"  
LAI 649: "Foundations of Early Childhood Education: Cognitive Theories I"  
LAI 650: "Foundations of Early Childhood Education: Cognitive Theories II"  
CEP 607: "Logo Teaching Practicum"

New courses developed

LAI 527: "Learning Mathematics: Early Childhood"  
LAI 529: "Computers in Early and Primary Education"  
LAI 570: "Standards and Curriculum"— A distance education course, taught completely through the Internet  
LAI 649: "Foundations of Early Childhood Education: Cognitive Theories I"  
LAI 650: "Foundations of Early Childhood Education: Cognitive Theories II"

Innovative Teaching

LAI 570: "Standards and Curriculum" is completely online course, that I developed as a component of GSE's new distance education Master's degree program. It was one of the first two courses taught in that program (taught under the number LAI 585, Fall, 2001). I then wrote a proposal for the course, which was approved by GSE under the number LAI 570. Surveys conducted by ourselves and by the GSE staff coordinating the program were positive; I am continuing to revise the course.

LAI 688 Innovative Programs in Math Ed. This was an experimental, innovative doctoral course actually taught simultaneously at 6 major universities by professors at each university (<http://icdweb.cc.purdue.edu/~criderj/edci620/faq.htm>). Distance learning and Web activities will complement readings from a book to be released Jan. 2000 entitled, Handbook of innovative research design in mathematics and science education. While most of the course took place in an asynchronous fashion, we met for about an hour once each week. Most of the discussion of readings and ideas concerning course material happened throughout the week by interacting with one another via technology. We used a threaded discussion format to discuss readings and discussion questions during the week. This resulted in a richer discussion than can occur in a traditional classroom session as students and faculty alike have additional time to reflect on the discussions. Thus, this provided a different kind of "classroom" experience for us. Rather than spending the week preparing/reading to engage in a weekly (i.e. three-hour seminar) discussion, participants engaged with the material and each other throughout the week and came together each week to summarize one topic area and preview the topic area for the coming week.

Kent State University

Graduate courses taught include  
“Teaching with Computers: The Early Years”  
“Teaching with Computers: The Elementary Years”  
“Introduction to Microcomputers in Education”  
“Designing Computer-Assisted Instruction”  
“Interactive Video”  
“Programming for Educators”  
“Teaching Mathematics: The Early Years”  
Undergraduate courses taught include  
“Developmental Reading/Language”  
“Human Development and Learning”  
“Mathematics Methods for Elementary Teachers.”  
“Teaching Mathematics: The Early Years”  
New courses developed  
“Teaching Mathematics and Sciences: The Early Years”  
“Teaching with Computers: The Early Years”  
“Designing Computer-Assisted Instruction”  
“Interactive Video”  
“Programming for Educators”  
“Seminar in Instructional Computing”  
New program developed  
Master’s Degree in Instructional Computing: An emphasis within the  
Educational Technology Degree Program  
Dissertation and Thesis Committees  
Doctoral Committees Chaired  
Bartelo, Kathleen  
Elvira Khasanova, October 2015  
Douglas Van Dine, 2014  
Carmen Brown, 2010  
Elaine Bruno Vukelic (medical leave, 2009)  
Nosisi Piyose, April 2009  
YongJoon Park, 2008 (co-chair)  
Janka Szilagyi, May 2007  
Mary Ellen Bardsley (co-chair), April 2006  
Gail Brade, 2004  
Vidya Thirumurthy, 2003  
Susan Paige, 2003  
David C. Wilson, 2002  
Ann-Marie DiBiase, 2002  
Mira Berkley, 2000  
Barbara Burns, 2000  
Kimberli Andrews, 1999  
Jeffrey E. Barrett, Aug. 1997  
Tamar Meyers, Aug.. 1997  
Mary Anne Hannipal, 1996  
Sudha Swaminathan, 1995



Julie J. Henry, 1995  
 Julie Sarama, 1995  
 Deborah Schrier, 1994  
 Sunhee Park, 1991  
 Donna Lambert, 1987  
 Ava Adell, 1987 (co-chair)  
 Bev S. Hlawati, B. S., 1985 (co-chair)

**Doctoral Committees, Member**  
 Nursel Yilmaz, Turkey, 2019  
 Jennifer McDonel, May 2013  
 Mary Elaine Spitler, May 2009  
 Yong Joon Park, May 2008  
 Karla Hamlen, April 2008  
 Albert Goldfain, April 2008  
 Reva Fish, December, 2007  
 Janka Szilagyi, May 2007  
 Tracy Galuski, August 2005  
 Brad Porfilio, April 2005  
 Robin O'Dell, April 2005  
 Yolanda Molina-Serrano, 2004  
 Anne E. Izydorczak, 2002  
 Mary Graff, 1999  
 David Henry, 1999  
 Joanne Basta, Mathematics Education, 1998  
 Cheryle Marie Albers, Sociology, 1997  
 James Lalley, defense of proposal May, 1996  
 Ardith Cole, 1995  
 William R. Bolton, 1994  
 Sue McMillen, 1993  
 Michael Mikusa, active  
 Hester Lewellen, 1993  
 Peter Brouwer, 1993  
 Beth Troy, 1991  
 Connie Weaver, 1990  
 Kay Gentile, 1990  
 George Wenner, 1988

**Master's Thesis Committees Chaired**  
 Andrea Kalaydjian, 2002 (co-chair)  
 Mary Farber, 1998  
 Helen Kang, 1991  
 Sheri Merriman, 1988  
 A. Borthwicke, 1987

**Master's Thesis Committees**  
 Shannon Reedy-Coleman, 2008  
 Reva O'Leary, 2004

**Honor's Thesis Committees Chaired**  
 Karen Kozy, 1988

## Service

### University

Member, Morgridge College of Education's Leadership Team (substitute for Sarama), 6/2109-present.  
Member, Morgridge College of Education's Appointments, Promotions, and Tenure Committee, 6/2107-present.  
Chair, both of Morgridge College of Education's Appointments, Promotions, and Tenure Committees, 8/2018-1/2019.  
Member, DU's Keck Foundation Internal Concept Review Committee, 2018  
Member, Morgridge College of Education's Internal Nomination Panel for the William T Grant Scholars award, 21/2015  
Member, Chancellor's Transformative Directions Advisory Group, December 18, 2014-2016  
Executive Director, Marsico Institute for Early Learning and Literacy, 1/2013-present  
Member, UB Decanal Review Committee for GSE, 2011-2012  
Member, Review Committee for SUNY Distinguished Professors and for the Faculty-related Chancellor's Awards (Excellence in Scholarship and Creative Activities; Excellence in Teaching; Excellence in Faculty Service)  
Member, UB Presidential Inauguration Committee, 2011  
Member, UB Research Advisory Committee, 2006-2012  
Member, President's Strategic Strengths Committee, 2006-2010  
Member, Advisory Committee, EON, 2006-2010  
Member, Search Committee, Mathematics Education, 2006-2007  
Associate Dean of Educational Technology, GSE, 2006-2007  
Member, GSE Technology Advisory Committee, 2004-2007  
Member, LAI Web Redesign Committee, 2006-2007  
Member, UB Decanal Review Committee for GSE, 2005-2006  
Member, UB SUNY Honorary Degree Committee, 2005-2006  
Member, Educational Technology Search Committee, temporary, 2004  
Member, GSE Executive Committee, Fall 2003-Spring 2006  
Member, Educational Technology Search Committee, tenure track position, 2003-2004  
Member, GSE Review Board on Research and Seed Grant Proposals, 2003  
Co-Chair, SUNY Talk Force on Mathematics Education, 2002-present  
Member, UB ETC Director search committee, 2002-2003  
Member, GSE Personnel Committee, 1997-2003  
Chair, GSE Personnel Committee, 2001-2002  
Member, Center for Teaching and Learning Resources and the Educational Technology Center's "Best Practices Technology in Education" Committee, 2002

Chair, Center for the Study of Technology in Education  
 Subcommittee on Research, 1999-2001.  
 Member, Faculty Advisory Committee for the Curriculum Center,  
 1998-2000.  
 Member, GSE Search Committee for Instructional Consultant  
 position, 1999  
 Co-Chair, GSE Working Committee on Technology, 1998-1999  
 Member, LAI Search Committee for Early Childhood Education  
 position, 1997-1998  
 Chair, GSE Personnel Committee, 1993-1997  
 Member, University Council on Research and Sponsored Programs  
 (CRSP), 1993-1998  
 Member, Search Committee, Math Education  
 Member, CERT Advisory Committee  
 Member, GSE Learning and Technology Committee  
 Member, Search Committee, Social Studies  
 Member, Ad hoc committee on Education, Research, and  
 Development Center  
 Area representative, Early Childhood/Elementary Education, for  
 LAI Strategic Planning ("Project 2000")  
 Member, Search Committee, BRIET  
 Member, GSE "Configuration Committee" on Teaching and  
 Learning for Understanding  
 Member, CERT Advisory Board  
 Member, Search Committee, CERT  
 Member, UB Council on Research on Sponsored Programs  
 Member, Personnel Committee (1993-1994)

State and Local

Early Childhood Leadership Commission (ECLC) of Colorado,  
 September 5, 2013-July 1, 2020

Other Universities and Organizations

Advisor on Michigan's K-3 Early Mathematics Initiative, 2014  
 NYSED Mathematics Standards Committee, 2005  
 Louisiana State University, promotion review, Harriet Taylor  
 Queensland University of Technology, Personal Appointment  
 Program Referee Report, 1996 and again in 2000, for Nicola  
 Yelland  
 Member, Child Development Center Advisory Board, KSU  
 Member, KSU's C&I Doctoral Admissions Committee  
 Chair, Search Committee, Elementary/Gifted TDCS Position  
 Member, Search Committee, Assistant Dean for Teacher  
 Education  
 Member, KSU Student Publications Policy committee member

PROFESSIONAL ORGANIZATIONS

Service for Professional Organizations  
 International

1. Member, Editorial Board, Journal of Cognitive Education and Psychology (JCEP), March 22, 2020 – present.
2. Guest Editor, Journal for Research in Mathematics Education, 2021.
3. Reviewer, Journal of Mathematical Behavior, 2021-present.
4. Reviewer, Child Development, 2020-present.

#### National

1. Member, Institute of Education Sciences (IES) Advisory Board for the Twenty Years of IES RCTs Project, January, 2021 to present. In this study, we investigate the corpus of large-scale randomized trials that have been funded by IES during its lifetime to determine how they have contributed to advances in the education sciences. We seek to understand and document not only the effects of interventions but also the direct and indirect impact of projects on practice, fundamental understanding of education, human capital for education research, and research methods.
2. Member, The National Academies of Sciences, Engineering, and Medicine’s Committee on Enhancing Science and Engineering in Prekindergarten through Fifth Grade, April 5, 2020 to present. The committee is conducting a consensus study to provide guidance on effective approaches to science and engineering instruction in prekindergarten through 5th grade that support the success of all students regardless of race, SES, home language, learning ability and needs, or the community in which they live.
3. Member, National Science Foundation (NSF) Review Panel, 2019.
4. Inaugural Member, STEM Education Advisory Panel, enacted by the American Innovation and Competitiveness Act which became law on 1/6/17, which charged the Director of the Foundation, Secretary of Education, National Aeronautics and Space Administration, and the National Oceanic and Atmospheric Administration to form the Panel, whose responsibility it will be to provide advice and recommendations to the National Science and Technology Counsel’s Committee on Science, Technology, Engineering, and Mathematics Education (CoSTEM), assess CoSTEM’s progress in carrying out responsibilities related to the America COMPETES Reauthorization Act, and help identify need or opportunity to update the Federal STEM Education 5-Year Strategic Plan. July 2018-June 30 2022.
5. Content Expert and Advisor, What Works Clearinghouse, IES (Institute of Education Sciences), September, 2018 – present.
6. Co-Chair, NSF’s DR K-12 Topical Group on Early Learning, whose charge it was to synthesize existing and emerging knowledge and produce and prepare briefs and other products for

research, practice, and policy audiences. November 30, 2017-present.

7. Member, Association of Mathematics Teacher Educators (AMTE) Leadership Team for the development of standards for the preparation of PK-12 mathematics teachers, April 30, 2015 to 2017.

8. Math content advisor for research compendium, A compendium of math and science research funded by NCER and NCSE: 2002-2013 (NCER 2016-2000), Washington, DC: National Center for Education Research, Institute of Education Sciences, U.S. Department of Education, Jan. 2, 2014-Oct. 1, 2015.

9. Member, National Council of Teachers of Mathematics: Research Committee, April 1, 2015 to April 1, 2018.

10. Member, of NSF Committee Of Visitor (COV) Reviews, FY 2015, March 2, 2015 to April 30, 2015.

11. Advisor and participant, National Governors Association's "Developing and Implementing State Strategies to Improve Early Mathematics Instruction and Outcomes," 2015.

12. Member, The National Academy of Sciences (IOM, Institute of Medicine and NRC, National Research Council) Committee on The Science of Children, Birth to Age 8. Established by an Act of Congress, signed by President Abraham Lincoln in 1863, the NAS is charged with providing independent, objective advice to the nation on matters related to science and technology. The Committee was charged to advise the President of the United States and the Secretary of Education by synthesizing and analyzing research on research on children birth to age eight, 2014-2015.

13. Member/Author, "The Common Core State Standards Initiative," a joint effort by the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO), 2009-2010.

14. Member, The National Academies/National Research Council's Committee on Early Childhood Mathematics. The Committee was charged to advise the President of the United States and the Secretary of Education by synthesizing and analyzing research on early childhood mathematics, 2007-2009.

15. Member/Author, President Bush's National Math Advisory Panel, charged by Executive Order 13398 to advise the President of the United States and the Secretary of Education on means to implement effective mathematics education, including the conduct, evaluation, and effective use of the results of research related to proven-effective and evidence-based mathematics education, 2007-2009.

16. Member, FACES Advisory Board (national longitudinal early childhood study)

17. Member, "Emerging Issues" Committee, National Council of Teachers of Mathematics, June 2007-May 2010.
18. Member of the writing group for the National Council of Teachers of Mathematics' "Curriculum Focal Points" Committee, 2005-2006. One of only 9 people across the U.S., developing a document to specify what mathematics should be taught at each grade level.
19. Member, Advisory Board, U.S. Department of Education's Institute of Education Sciences (IES) committee on the Mathematics Curriculum Study, 2005-2010.
20. Member, Title I Mathematics Collaboration Steering Committee, U.S. Department of Education's Office of Elementary and Secondary Education, 2004-present. One of only 10 people, nation wide, developing a national strategic plan that will direct Title I to improve mathematics learning in high poverty, low performing schools.
21. Review panel, IERI (combination of NSF, the U.S. Dept. of Education, and NIH, sponsored by the Institute of Education Sciences, IES, of the U.S. Dept. of Education), May 14-16 2003.
22. Originator, chair, author. I proposed to both the National Association for the Education of Young Children and the National Council of Teachers of Mathematics that they produce a joint position statement on the mathematics education of young children. Both national organizations accepted my proposal, and funded a committee to write this statement. I chaired that committee and led the writing of the joint position statement, 2001-2002.
23. Associate Editor, *Mathematical Thinking and Learning*, 1998-2008. Published by Lawrence Erlbaum Associates.
24. Editor, *Learning and teaching measurement*, the 2003 Yearbook of the National Council of Teachers of Mathematics.
25. Editor, "Early Childhood Corner," *Teaching Children Mathematics*, 1999-2004.
26. Editor, "Computer Materials," *Teaching Children Mathematics*, 1991-present
27. Member, writing team of NCTM's Standards 2000 Project and thus co-author of its *Principals and Standards for School Mathematics*.
28. Reviewer, *The Reading Teacher*, 2021 – present.
29. Consultant, Head Start Bureau, Department of Health and Human Services, 1999
30. Consultant, Education Research Initiative, sponsored by the Department of Education and the National Science Foundation, September, 1998.

31. Author (Pre-K to grade 2 group), National Council of Teachers of Mathematics Standards Revision Project, March 1997-year 2000
  32. Consultant, National Science Foundation, model early childhood curriculum for the NSF's child development center, 1997-present
  33. Commissioned to write guidelines for the developmentally appropriate use of computers in early childhood education, 1992-1997.
  34. Member, Editorial Review Board, Computers & Education, 1992-2016.
  35. Member, Editorial Review Board, International Journal of Computers For Mathematical Learning, 1996-present
  36. Member, Review Panel, National Science Foundation, June 1991 to present.
  37. Editor, "Research Into Practice," Arithmetic Teacher, 1990-1991
  38. Member, Technology Initiative Working Group, sponsored by the National Center for Research in Mathematical Sciences Education and NCTM, 1988-present
  39. Member, NECC '89 Conference Committee, National Educational Computing Consortium, 1988-1989
  40. Member, Editorial Review Board, Journal of Computing in Childhood Education, 1989-present
  41. Editor, "Computer Materials," Arithmetic Teacher, 1986-1990
  42. Member, National Council of Teachers of Mathematics: Addenda Project, 1989-1991
  43. Chair, Editorial Board, Journal for Research in Mathematics Education, 1988-1990
  44. Member, Editorial Board, Journal for Research in Mathematics Education, 1987-1990
- Regional, State, and Local
1. Taught a session on the Curriculum Research Framework for Michelle Stephan's international course (including Turkey, US), University of Central Florida, March 30, 2016.
  2. Keynote presentation, Seattle, WA, May 19-20, 2015. Washington State's OSPI Expert Mathematics Panel. The Building Blocks of Early Mathematics. (invited)
  3. Consultant, Washington State's OSPI Expert Mathematics Panel, 2013-2015.
  4. Member, Early Childhood Leadership Commission of Colorado (ECLC), Office of Early Colorado Department of Human Services, 2013-present.
  5. Consultant to the New York State Department of Education on Preschool Standards. 2010.

6. Key consultant to the New Jersey Department of Education on Preschool Content Standards and Observational Measures in Mathematics. Presentations and advisory board meetings, New Brunswick, NJ, 2006.
7. Key consultant to the California Department of Education on California Preschool Content Standards in Mathematics. Presentations and advisory board meetings, Berkeley, CA, 2005-present.
8. Member, Conference Committee, Educational Computer Consortium of Ohio, 1988

#### Consulting

1. Consultant, Jim Henson Production, September 2020 – present.
2. Member, Advisory Board, EGMA, August 2011-2020.
3. Member, Advisory Board, Harcourt-Brace, Early Childhood Assessment (ECHOS) and SCORE standards.
4. Consultant, CTB/McGraw-Hill, Early Childhood Assessment, 2001-2008.
5. Consultant, U.S. Department of Education's America Counts program, August 2000-2001.
6. Consultant, SRA/McGraw-Hill, 2001-2002.
7. Consultant, NSF-funded Assets and Access Project, Education Development Center, NYC. September 1998-2004.
8. Consultant, Head Start Bureau, Washington, DC. March, 1999.
9. Consultant, Developing Mathematics Ideas Project, Education Development Center, Cambridge, MA. February 1998-2009.
10. Consultant, KidCode project, January 1999.
11. Consultant, Microsoft Corp., on the development of My Personal Tutor, December, 1979-September, 1998.
12. Consultant, Steck-Vaughn., mathematics education curriculum design, March, 1997-2001.
13. Consultant, Computer Curriculum Corp., mathematics education software design, Jan., 1995-March, 1997
14. Consultant, Rutgers' Discrete Mathematics Project, funded by NSF, 1995-2000.
15. Consultant, Education Development Center, for their project to be the Assessment Development Laboratory for the Early Childhood/Generalist certificate for the National Board for Professional Teaching Standards, 1994-1999.
16. Consultant on educational computing, Blind-Rye Brook School District, July, 1994-1996.